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Individual Differences in Cognitive Representations of Social Environments

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College of William & Mary - Arts & Sciences

INDIVIDUAL DIFFERENCES IN COGNITIVE REPRESENTATIONS OF SOCIAL ENVIRONMENTS

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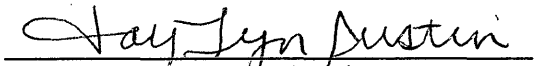

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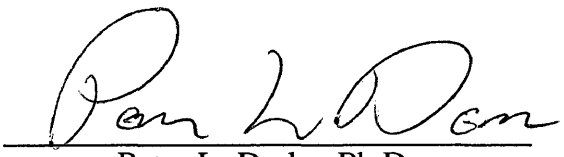

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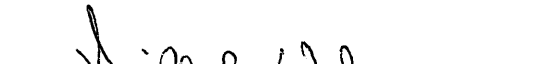

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To Billy Statham and Violet Haddox Austin

and

To Christopher Emery Lane

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The writer thanks Dr. Cynthia Null, for her patience and guidance during the data collection and analysis stages of this project. Her expertise in multidimensional scaling techniques was invaluable.

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ABSTRACT

The purpose of this project was to study the way a person thought about other members of his social group. The primary goal was to discover whether people organized others similarly. Secondarily, personality aspects from other studies were tested to see if they were the organizing principles used in person perception.

To study person perception in naturally occurring intact groups, freshmen living clusters were recruited to participate in the current study. Each person rated other group members according to how similar pairs of people seemed. Next they defined what characteristics they used to judge similarity and rated group members on each characteristic, as well as four mandatory characteristics.

Multidimensional scaling techniques were applied to examine the relationships among people in each group. The similarity ratings revealed that each person's conceptualization of the group was distinct and that anywhere from 2 to 4 dimensions were necessary to explain individuals' data adequately. The ratings revealed that the mandatory characteristics were quite important in explaining individual configurations.

Similar characteristics were used by people to organize their social environment, but each person had a different view of how people in their group rated on each characteristic. Thus, people's perceptions of others in their group were similar in some ways but could not be considered the same. People perceived others idiosyncratically, but used similar dimensions to organize people in general.

INDIVIDUAL DIFFERENCES IN PERSON PERCEPTION

INTRODUCTION

The study of person perception is important in understanding social phenomena, because what we perceive influences how we interact with others. Social perception begins when a person observes another's behavior or hears a description of someone (Rosenberg & Sedlak, 1972). It is theorized that people generalize the traits and behavior to experiences with other people who had those traits or displayed that behavior. Perception is facilitated and affected by stored knowledge from prior social contact. Prior knowledge about people and situations allow social perceivers to make sense of new encounters. It would be difficult to understand and remember new information without drawing on abstracted general knowledge about how the world works and filling in where information is missing or ambiguous (Schneider, Hastorf & Ellsworth, 1979). When a perceiver has to process a great deal of information about several people, there may be a tendency to simplify the process by storing information in terms of categories rather than in terms of individuals (Fiske & Taylor, 1984). Accumulated knowledge about categories of people does not do justice to the unique qualities of any given individual, but it makes possible a certain efficiency and adaptiveness in social perception.

Asch's work on impression formation began a large body of research on trait inference and centrality. Building on this, schema theory and prototypes developed as models for cognitive organization and information processing. Separately, implicit personality theory accounted for the perception of stable traits in others and the associations among these traits. It is this conceptualization of the constructive inner-workings of individuals which is important in the present project.

Traditionally, research on person perception has focused on laboratory studies. This experimental approach may not be as informative as more naturalistic research

methods. An alternative to laboratory methods is multidimensional scaling. This is a non-manipulative assessment technique, which allows a person to define their organization of a group and describe the principles underlying this organization. The present project used multidimensional scaling to learn about individuals' organization of their social group. The goals were to determine whether people in the same group organized members similarly and to glean the personality traits underlying their cognitive organization.

Early Research on Impression Formation

Solomon Asch was a pioneer in the area of person perception, investigating how people combined isolated impressions of an individual's personality and came up with an integrated overall perception (Schneider, Hastorf & Ellsworth, 1979). Asch (1946) studied impression formation using personality descriptions. He presented subjects with a list of traits (intelligent, skillful, industrious, determined, practical, cautious), including either "warm" or "cold" in the set. Subjects were then asked how the stimulus person rated on other properties. The results showed that the warm-cold aspect had a drastic effect on people's perceptions. Subjects who saw the "warm" list judged the stimulus to be generous and good-natured, whereas subjects who saw the "cold" list reported that the stimulus did not have these qualities. Conversely, both "warm" and "cold" lists evoked the qualities of reliable and important. This established the importance of context in trait inference.

Asch set forth two ways that an impression might form. The configural model proposes that traits have meaning only with their context. This model suggests that a final impression is made up of traits and relationships among the traits. In contrast, the additive model is an example of an elemental approach to social cognition. Individual traits are evaluated independently of one another and then judgments are combined into a summary impression. Asch favored the configural model, believing that the process of forming impressions was a Gestalt, which could not be understood by analyzing the parts. Each trait affects or combines with the others and the final impression is a dynamic one not easily

predicted from the individual traits taken separately. In his conceptualization, the stimulus traits produced a coherent impression which in turn led to further inferences about the stimulus person (stimulus traits-impression-response inferences). Stimulus traits are the ones that a person is given and response traits are the ones the person generates or infers. He believed that the formation of the impression enabled the perceiver to generate new information.

Asch pioneered another direction of research: trait centrality. He believed that in many impressions there are central traits or pieces of information about the stimulus person that tend to dominate the impression. These central traits organize the other traits and influence their meaning. Asch solicited open-ended responses from subjects about how they organized perceptual information. Their descriptions suggested that certain traits were central in the formation of their overall impression.

Trait Theory

Two research directions developed from Asch's work. They are trait covariation or inference, which seeks evidence that the trait relationships which exist in people's minds really exist in the social world, and trait centrality, which seeks to predict what subjects will infer from a given list of stimulus traits. Wishner (1960) studied the relationships among traits by performing correlations on 53 of Asch's traits. Wishner found that the correlations of "warm" and "cold" with response traits predicted how much response traits were affected by the inclusion of "warm" or "cold" in the stimulus list. Wishner's findings were two-fold; the traits people will infer can be predicted from the traits they are given and the central trait has a high correlation with the response traits.

Wishner found that the centrality of a trait did not depend on what other stimulus traits were given but primarily on what the subject was asked to infer. His predictions were not always perfect, which suggests that several stimulus traits may have been central or centrality was determined by context. Whether a given trait is central or peripheral in the formation of an impression may depend on its context, on what other traits are presented

(Schneider, Hastorf & Ellsworth, 1979). Some traits seem to have particular power to imply other traits independently of stimulus context (Schneider, Hastorf & Ellsworth, 1979). These powerful traits relate to internal, stable attributes and overall disposition.

Zanna and Hamilton (1972) found further evidence for trait centrality. They studied two dimensions, namely intellectual and social desirability. They classified 60 traits as either socially desirable or undesirable and intellectually desirable or undesirable, based on a previous study by Rosenberg, Nelson and Vivekananthan (1968). They reasoned that when socially relevant traits were varied in the stimulus list, there would be greater effects on the responses of other social traits. They found that when a stimulus person was described as warm (a socially desirable trait), people inferred other positive social traits, such as popular or good-natured. The results of this study showed that the centrality of a trait is dependent to some extent on the response traits.

There is evidence that perceptual processes are subject to selective perception (Bruner & Krech, 1950), distortion (Bruner & Goodman, 1947), biasing (Lorge, 1936), and selective forgetting (Meltzer, 1930). Thorndike (1920) found that subjects ascribed positive characteristics to stimuli with a positive description; he called this the "halo effect." Nisbett & Wilson's (1977) study corroborated this finding. They showed subjects a filmed interview with a professor who acted either cold and hostile or warm and genial. Subjects judged the warm professor as more physically attractive, even though the professor's appearance in both films was the same.

Research has focused on whether people's trait associations are realistic, whether pairs or groups of traits actually occur together in the general population. Studies have shown that perceived trait relationships do not mirror actual relationships. For example, Mirels (1976) presented subjects with statements about a person and they grouped traits they thought would go together. He compared these grouped traits with whether these statements actually went together in people's estimation of themselves. For example, the two statements "My work is carefully planned and organized before it is begun," and "My

papers are always neat," were perceived to co-occur 92 percent of the time. But only 44 percent of people who endorsed the first proposition actually endorsed the second. Thus, people's ideas about trait covariation did not match their self-report about trait covariation.

Further, in studies of people's ability to estimate relationships among stimuli and events, the data suggest the estimates are subject to significant bias. A phenomenon that shows this clearly is the "illusory correlation," coined by Chapman and Chapman (1967). They found that people infer associations in word pairs when these associations were not given. Subjects saw several word pairs a varying number of times and were later asked how often certain word pairs had occurred. Unusual words were judged to go together more often than they actually had. Also, words that had a common association (bacon-eggs) were paired even though they had not been presented together.

Two studies which claimed support for perceiver accuracy were done by Lay and Jackson (1969) and Stricker, Jacobs, and Kogan (1974). Both studies had subjects generate salient aspects in their perception of others. They found a high correspondence between the dimensions that perceivers used in making personality ratings and their actual responses to a personality inventory. Thus, there may be some correspondence between our perceptions of trait relationships in others and the actual measured relationships between traits in others, but there is also evidence which contradicts perceptual accuracy. It is possible that people are sensitive to the actual covariation of characteristics and behaviors, but there is abundant evidence that they often assume stronger relationships than the evidence warrants (Schneider, Hastorf & Ellsworth, 1979).

Since most research on trait inference has used written words to describe personality traits, the possibility arises that trait co-occurrence might simply be the grouping of and relationships among words. Peabody (1967) attempted to distinguish between the names of traits and the personality characteristics they represent. He varied the connotative, evaluative aspects of words and the denotative, descriptive aspects of words. He formed quartets of words with two positive and two negative traits, such as bold and

cautious vs. rash and timid. Then he presented one term to subjects and asked which other words were implied by that word. If the subjects used the evaluative over the descriptive meaning of traits, like grouping "bold" and "cautious" more than "bold" and "rash," then personality traits would be better explained by semantic organization. Peabody found that the inferences subjects made were based more on denotation and content, than on connotation. Thus, there is evidence that trait co-occurrence research has investigated personality descriptors instead of semantic groupings.

Social Schemata and Prototypes

Along with trait theory, researchers have proposed another theoretical cognitive model called social schemata. Schemata are theoretical cognitive structures which help people organize perceptions of themselves and their environment. A schema contains both the attributes of the concept and the relationships among the attributes. There are several types of social schemata, as described by Fiske and Taylor (1984). Person schemata encompass the traits and goals that shape other people's behavior and the complex personality of typical or specific individuals. Self schemata contain information about one's own personality, appearance and behavior. Role schemata pertain to knowledge about broad social categories, such as age, race sex or occupation. They include information which places the individual in society. Event schemata are the shared understandings of what typically happens on certain occasions.

Schema theory has enriched the field of social cognition, by providing explicit models of cognitive structure in impression formation (Fiske & Taylor, 1984). Categorization researchers independently developed theories similar to schema theory, which have also been useful in social cognition research. Cantor and Mischel (1977) suggested that prototypes serve to organize impressions. Knowledge about a category is composed of a typical or ideal instance, accompanied by the full range of peripheral or less good examples. There are differences between prototypes and schemata (Fiske & Taylor, 1984). Prototypes have known attributes even if all the attributes are not directly relevant

to category membership. In contrast, a schema permits some features to be unspecified. Because of this flexibility, a schema is a more efficient representation than a prototype. It has fewer details and is more focused on the essentials of category membership (Anderson, 1980; Mandler, 1979).

Implicit Personality Theory

Trait theory and schema theory are cognitive models people use to navigate the social world. People form individual belief systems automatically and use these theories to aid in social processing. Asch's position that people form an overall impression which cannot be understood by studying its components was countered by the emergence of implicit personality theory. Bruner & Tagiuri (1954) held that inferences were made based on the information given without the formation of a holistic impression. They proposed implicit personality theory, which is the network of trait associations that people have. This network is made up of interrelationships among traits. Certain dispositional traits function as organizing themes under which other trait connections fall. Implicit personality theory is defined as the set of assumptions a perceiver makes about the relationships among traits. They suggested that inferences are generated by a naive sense people have of which characteristics go with other characteristics. They thought that people make judgments by inferring other traits that accompany the traits they are given. Implicit personality theory accounts for the perception of stable physical and psychological characteristics, or the traits that people perceive as characteristic of themselves and of others (Rosenberg & Sedlak, 1972). Elements of people's implicit theories are traits, behaviors, style of dress, nonverbal cues and physical characteristics (Schneider, 1973).

Categorizing people and making inferences about them point to an important cognitive truth, namely how we go beyond the information given. Without the ability to do this, we would forever be stuck at a concrete level of thinking about others (Schneider, Hastorf & Ellsworth, 1979). These over-generalizations about the behavior of single-stimulus persons over time probably result from our need to impose stability on the

behavior of others (Fiske & Taylor, 1984). Reliance on one's own understanding of people provides the sense of prediction and control which are critical to one's well-being (Fiske & Taylor, 1984).

Thus far, the investigation of accuracy in trait co-occurrence does not address the development of a person's implicit personality theory. This would entail assessing trait covariation in the population periodically and assessing the person's theory at the same interval. A delay might be found in the actual and the perceived. Probably, the implicit personality theory that one holds develops gradually through experience and changes with exposure to new trait associations. There may be a delay in the accuracy of a person's theory when compared to current data on trait co-occurrence, but it may have been accurate 6 months ago. It is important to note that regardless of whether people's assumptions are founded in reality, they need implicit personality theories to facilitate processing of new information. These theories are the best estimate of others that a person has at any one time.

Multidimensional Scaling Methods and Research

Many researchers in social psychology have used an experimental approach to studying social perception. This involves manipulating the variables of interest in the laboratory and removing people from their social context. They have looked for universal principles that underlie all social interaction and have used group analysis to substantiate their theories. While much has been learned, this approach has its limitations because the outcome does not necessarily describe naturally occurring interactions or group organization by its members. The naturalistic approach is potentially more valuable in understanding person perception, because it attends to how the naive observer perceives others and organizes the social world in which he or she lives.

To elicit information from people about the inner workings of their perception in a naturalistic way, multidimensional scaling (MDS) has been a useful technique. People's responses reflect how they organize others and the dimensions they use to evaluate them.

These techniques for data collection and analysis are important for studying individuals' perceptions, because there is no manipulation of the stimuli by the experimenter. The only order of the stimuli being studied is imposed by the perceiver, as long as pairs are presented in random order. It begins with the selection of a set of interrelated entities. Subjects rate all possible pairs of objects in the set on the basis of similarity. The data form a matrix of numbers reflecting how closely each pair of entities are related. The more traits or people being judged, the more complicated the matrix and number of relationships. Thus, it is beneficial to find a parsimonious representation of those relationships, using the fewest dimensions possible while still explaining the relationships.

An example of multidimensional scaling techniques that pertains to trait implications is a study by Rosenberg, Nelson and Vivekananthan (1968). They had subjects place 60 traits into piles representing people, and then calculated the co-occurrences or distances among the traits based on how often any two traits were placed together. Then using an MDS procedure, they found the underlying dimensions of the distances. Some of the traits appeared close together, which were traits that subjects tended to see as related or used to describe the same person. The trait distances all appeared in two dimensions, which were named "intellectual" and "social," with a positive and negative pole for each. However, the two dimensions were not at right angles to one another, meaning they were related. Generally good social traits were also generally positive intellectual traits.

Another study pertaining to traits was conducted by Wish, Deutsch and Kaplan (1976). They studied the perception of actual and stereotypic role relationships. They found four dimensions were needed to explain the multidimensional scaling solution. These dimensions were cooperative and friendly vs. competitive and hostile, equal vs. unequal, intense vs. superficial, informal or socio-emotional vs. formal and task oriented. They also found that the relative importance of these dimensions varied systematically across various subgroups based on biographical characteristics of the subjects.

Another study which focused on the dimensions used in social perception was

conducted by Forgas (1976). He studied situation perception in samples of housewives and college students in England. Each group generated social episodes common in their daily lives and each subject judged the similarity among their respective situations. Using multidimensional scaling techniques, he found that the two samples used similar dimensions to organize different social situations. Some universal dimensions were found even though ratings of these dimensions varied given individual perceptions. The dimensions were: intimacy, involvement, self-confidence and knowing how to behave. Among the student sample, "pleasantness" was interpreted as a dimension important to the solution.

In another study of college students, similar dimensions were found to underlie college students' judgments of college situations. Battistich and Thompson (1980) examined the properties of the college environment, so that college students' perceptions could be better understood. They collected similarity data on 30 representative social situations, which were determined by student diaries. These situations described aspects of college life, such as studying, dating, eating, relaxing and playing sports. Also, subjects rated each situation on 38 properties and described what their behavior and affect would be in each situation.

Using KYST to determine the multidimensional scaling solution, the authors decided that four dimensions were necessary to describe the similarity data based on a stress value of 0.5. They found the first dimension to distinguish situations primarily in terms of the emotional involvement between individuals, or interpersonal intimacy. This dimension roughly divided situations into academic and social ones, but this did not describe the dimension consistently. The second dimension was described by group versus individual activities, with sports and parties having large positive loadings and taking an exam having a negative loading on this dimension. Social isolation was the interpretation for the third dimension, which involves the individual in the presence of others being isolated or detached. The fourth dimension was interpreted as behavioral

conformity, with polite versus impolite, dominant versus submissive, and cautious versus reckless organizing situations on this dimension. These results display more subjective, connotative qualities instead of structural, objective characteristics. Interpersonal characteristics were more salient to these college students than physical setting or particular activities. The emotional relationship between individuals was a major distinction made by students. The main problem with these results is the group solution had a stress value of 0.5 and should not have been accepted. When stress is high, individual solutions or subgroups may be the best way to describe the data.

Before this study, Magnusson (1971) found five common grouping of situations in a small sample of Swedish college students: positive and rewarding, negative, passiveness, social interaction and individual activity. The importance of affective reactions is apparent in the first two factors, while the latter three factors are similar to the group versus individual activity dimension found by Battistich and Thompson (1980). However, Magnusson failed to assess the relevance of the stimulus situations to subjects. Pervin (1976) also noted the importance of affective reactions and behavioral constraints in distinguishing situations in his idiographic analysis of four college students' free-response situation descriptions. The limitations of this study were the small number of subjects and a methodology which did not allow comparison among individual subjects.

Even though multidimensional scaling studies use a naturalistic approach, there are several problems evident in some of these studies on person perception (Rosenberg & Sedlak, 1972). These problems include: experimenter identification of dimensions, small sample sizes, high stress values, group solutions instead of individual or subgroup solutions, generalization of results to the population, and stimulus sets made up of traits or situations instead of people. Dimensions have been statistically identified but arbitrarily described by the experimenter. There has been very little attention to subject interpretation of underlying dimensions. This poses a problem because of the discrepancy that may exist between what the experimenter concludes and what subjects intended by their answers.

Rosenberg, Nelson and Vivekananthan (1968) showed that a two-dimensional space interpreted in terms of good-bad and hard-soft could be interpreted equally well in terms of intellectual desirability and social desirability. The procedure for fitting trait properties is useful in eliminating completely redundant or poorly fitting trait properties but provides no basis for choosing from among alternative interpretations. Schneider (1973) suggested that further attention should be given to the comparison of subject-generated dimensions.

Schneider also encouraged the use of stimulus persons instead of just traits in similarity scaling research. Generality becomes a problem when stimulus sets are artificially formulated. In the past, they have been defined by the experimenter instead of drawn from the natural environment. This experimental control hinders the investigation of natural processes of perception. Another problem in some studies is the small sample size. The number of subjects in MDS studies must be large enough, so that results are reliable instead of idiosyncratic and misleading. Another flaw in the methods used is the high stress levels accepted. When stress of an MDS solution is relatively high, researchers should look at the possibility of individual solutions or subgroups.

Some of these problems were addressed in a study by Jones & Young (1972). They studied person perception in an intact group and a naturalistic setting, using group members as the stimulus set. They found that the relative salience of certain perceptual dimensions was closely related to independent information about the perceivers. They asked the faculty and graduate students of their psychology department to rate all possible pairs of the lab members according to their similarity, taking into account "whatever characteristics of the individuals that are relevant for making similarity judgments." They found that members of the department were judged to vary on three dimensions identified as status, professional interests, and political persuasion. For faculty members, status was more salient than professional interests, while for graduate students the reverse was true. These are interesting findings, because individual perceptions were assessed and perceiver correlates accounted for the importance of different dimensions.

Other parts of the study are problematic. Jones and Young found that people organize the same group similarly. This is not surprising, since roles and hierarchy were evident in the group, even before data were collected. In this group, as in many graduate departments, there is an established order which people accept and by which they organize others. The external hierarchy is imposed on members of the group and their roles are predetermined. Their stimulus set could have included only one level of the hierarchy and offered much more information on naturally ordered groups and personality traits. Also, they could have studied more than one graduate department to make sure their results were reliable. Though Jones and Young's study explored individual perceptions of an intact group in the natural environment, several problems with the literature on multidimensional scaling still remain.

Nomothetic vs. Idiographic Approaches

Results from prior studies have been based on group analyses, whereas more individual analysis might be useful. Attention to characteristics of the perceiver reveal that certain variables account for perceptual differences among people. Perception and stored knowledge are not always accurate and this distortion has been explained by perceiver correlates. Categorization, generalization and inference are helpful in processing information about an unknown other, but can also hinder the process. These processes are similar to stereotypes, because they involve making assumptions about a person based on a limited amount of information. Bias and misjudgment can result in discrimination against racial, cultural, gender, and age groups. Selective attention is the filtering process that stimuli undergo during perception.. Attention is influenced by many internal variables, such as temporary mental states, disposition, age, culture, and beliefs. External variables guide attention, also. For example, social cues and context have dramatic effects on what is perceived and ignored.

The implicit personality theories which result are surprisingly rigid and once established are difficult to change (Cantor & Mischel, 1979). People's beliefs are resilient

and difficult to change, even when evidence contradicts their beliefs. For example, Berman & Kenny (1976) exposed subjects to a number of stimulus persons, each defined by a pair of traits. Some subjects saw a stimulus person who exhibited two traits that generally go together or imply each other, while other stimulus people exhibited one trait and an unrelated trait. When subjects rated these stimulus persons, traits that had been presented together were seen as more highly related than those that had not gone together. But when asked which traits should go together, they maintained their prior assumptions about trait relationships, even though they had just been exposed to "people" who were different. Similarly, Markus (1977) found that self-schemata were very stable and not easily influenced. When subjects rated themselves highly on a trait, they tended to reject contrived information that was inconsistent with their self-views. This suggests that people's implicit personality theories are very stable as they pertain to the self and others.

It may be difficult for people to change their ideas about others when faced with information that is not accounted for by their current schemata (Cantor & Mischel, 1979). Some researchers have explained inaccuracy in people's perceptions and cognition by postulating inner states, such as exploration (Montgomery, 1954), curiosity (Berlyne, 1955, 1960), intolerance for ambiguity (Adorno, Frenkel-Brunswik, Levenson & Sanford, 1950), desire for uncertainty reduction (Berlyne, 1957), avoidance of cognitive conflict (Allport, 1937), and open/closed minds (Rokeach, 1960). Possibly, certain experiences or ways of looking at things make it more difficult to modify schema. People may not have flexible constructs to begin with, or because of unknown variables have a difficult time accepting incongruous information. Disconfirming or incongruent information requires more effort to process than congruent information and for this reason maybe ignored. When the effort is made, the new information will be remembered (Cantor & Mischel, 1979).

Distortion in perception has been given a great amount of attention, to predict bias given characteristics of the perceiver or the situation. Rogers and his colleagues (Rogers,

Kuiper, and Kirker, 1977) found that self-pertinent information affected perception and improved recall. They presented subjects with a list of traits and asked them questions about the words, such as: Were they printed in small or large letters? Did one rhyme with another? and Did one word mean the same as another? Also, they were asked if certain traits described themselves. Recall was best for those traits which they had to judge as self-relevant or not. Within this group of words recalled, more were traits that the subject identified as self-relevant. Thus, people are more likely to observe and remember self-relevant characteristics and behavior in others.

Distortion can be accounted for by stable values and attitudes, as well as temporary mental states. Wish, Deutsch and Biener (1970) found that attributes of the perceiver accounted for individual differences. They studied the impact of political stance on nation perception using multidimensional scaling techniques. They asked subjects to rate similarity of 21 countries and also assessed each subject's political stance on the war in Vietnam. Based on the data, they named three dimensions that seemed to organize the MDS solution - political alignment, Pro-Western vs. Pro-Communist, and economic development. "Hawks," people who supported fighting in Vietnam, gave greater weight to political alignment with the United States, while "doves" used economic development as an organizing dimension, in their similarity judgments of nations. Sherman and Ross (1972) asked subjects to judge the similarity of political figures. Whether the politician was a "hawk" or "dove" and whether they were acceptable as a presidential candidate seemed to be the organizing dimensions. The subject's liberalism was measured and was found to predict how salient these dimensions were to the subject.

Similarly, Wiggins, Hoffman, and Taber (1969) found that differences in perception could be accounted for by perceiver attributes. Subjects were asked to rate the intelligence of a number of hypothetical students, given such information as grades, aptitude tests, study habits, and responsibility. The researchers also evaluated the subjects themselves on intelligence and authoritarianism. Subjects used different information to

determine the intelligence of the stimulus persons and the information they used could be predicted by their level of intelligence and authoritarianism.

Situational variables have been shown to affect perception. Sherman (1973) manipulated whether subjects expected to cooperate or compete after making political judgments. He found that "hawk-dove" differences were strongest when subjects expected to cooperate. O'Neal (1971) studied cognitive sets which affected perception. He asserted that people need to be more certain about people they will interact with than with those they will not. He found that trait correlations for a stimulus person were higher when subjects anticipated meeting the person they were rating.

In addition, George Kelly (1963) argued that a great deal about a person is revealed in how that person categorizes others and the constructs he uses to describe his interpersonal world. A construct is the way any two things are similar and different from a third. Constructs can be pairs of traits or a set of related traits. They are similar to categories, schemata and prototypes. Kelly points out that even when people seem to use a similar trait to describe another person, it does not mean they perceive the person in the same way. Allport (1937) introduced the distinction between idiographic (individual case) and nomothetic (universal principle) approaches to psychology. He advocated that researchers pay more attention to individuals and the information each person can provide. The study of concrete individuals is useful, theoretically interesting and until recently neglected in psychology (Fiske & Taylor, 1984).

In keeping with this, Jaccard & Dittus (1990) point out that inferences drawn from group behavior do not necessarily lead to an understanding of specific individuals. Also, if social settings are hypothetical or created in the lab, they may be different from what occurs naturally; an arbitrary grouping may not reflect what occurs in the world. The distinction between the nomothetic and idiographic approaches to psychology is an important one. Idiography is the study of individuals using methods which elicit their understanding of psychological phenomena. Nomothetic principles are used in studying what is similar

about all people. They argued that none of the current approaches to social psychological research were satisfactory. For example, the case study provides great detail about an individual, but cannot be generalized to a group; group analyses allows group means to characterize individuals' behavior in groups. They propose a new theory and empirical system using both nomothetic and idiographic methods. They emphasize the need for more studies of individual differences within social groups, with attention to similarities among individual results.

Because group analyses are not necessarily the most accurate description of the individuals comprising the group, the idiographic approach provides a different perspective on person perception research. Studies have shown that people perceive the same object differently and that this can be predicted by assessing self-relevant information. By greater attention to individual differences, predictions about person perception may become more accurate. Individual differences should be an object of study, instead of a problem requiring experimental control.

More idiographic methods of research have been established and offer a means of understanding person perception from an individual's point of view. For example, Rosenberg (1977) used multidimensional scaling techniques to study individual implicit personality theories. Unlike other scientists using these methods, Rosenberg began intensive analysis of single perceivers. He elicited the stimulus people and traits or feelings which might apply to them from individual subjects. Then each trait or feeling was rated for applicability to each stimulus person. To analyze the data, he used both multidimensional scaling and clustering techniques, so that clusters rather than individual traits were represented in the multidimensional space. His techniques allow a researcher to spot various interesting and unique clusters that may provide insights into individual personality, not to mention person perception processes.

Present Project

The current study was conducted in an attempt to better understand how people

think about their friends and what dimensions they use to organize their social relationships. This project sought to describe how individual group members organized and thought about the other members of their group. An important question asked was whether individuals organize their group similarly. One of the difficulties in previous studies was that people's roles were defined by the situation (Jones & Young, 1972). Studying these groups did not reveal what was important about people's personalities, but what was defined by the social situation. It was important to find a group in which roles and norms did not define the order. The participants as well as the stimuli were from naturally occurring, intact social groups on the college campus, specifically freshmen living clusters. Freshmen were ideal for the study because they were new to the college environment and did not yet know the norms of the student body. Their roles and norms were not yet formalized and any order in the group was defined by its members. The design and procedures were non-manipulative, in an attempt to understand each person's idiosyncratic cognitive organization of others in their group.

People's perceptions of others were assessed using multidimensional scaling techniques. Subjects judged the similarity of every possible pair of people in their group, using their own definition of similarity. These data were used to formulate individual configurations, or cognitive maps of group members. These maps were intended to represent the way that people arranged group members in relation to one another. Free-response was encouraged when participants were deciding on the characteristics they used to judge similarity. These characteristic ratings helped clarify what each person's definition of similarity involved. Also, the characteristics were analyzed to see the extent to which they could be mapped onto a person's MDS configuration.

This project attempted to determine the underlying personality aspects used to organize people. Other studies have claimed that certain aspects are important in person perception. For example, Falbo (1977) found that power was an important element in interaction and the cognitive organization of others. This suggests that a prominent feature

in perception is the degree to which a person is controlling or manipulative in social interaction. Whereas, Forgas (1976) found that pleasantness was important in the perception of others in a college population. Also, students as well as housewives paid attention to whether people were conventional and "knew how to behave." Finally, Wish, Deutsch and Kaplan (1972) found that intimacy and friendliness were salient aspects in the perception of others. From these studies, four questions were formed which asked subjects about how controlling, friendly, conventional and open each group member was. These mandatory ratings could then be analyzed for their importance in defining solutions. It was hypothesized that they would be very helpful in explaining the cognitive frameworks.

In sum, the present study investigated individuals' perceptions of their social environment, to see whether individual configurations were similar within groups and to determine the underlying dimensions in these configurations.

METHOD

Subjects

Freshmen living groups at the College of William & Mary were recruited on the basis of group size and sex. Groups of approximately 20 freshmen, living on a single sex hall, met the criteria. Two male halls with 20 and 25 members and two female halls with 20 and 21 members agreed to take part. Each hall was paid $75 for group participation. Participants were between 18 and 19 years of age. Each group had lived together for 5 to 6 months when data collection began.

Questionnaires were completed at the end of the study, which suggested that the four groups were made up of similar kinds of people. These data are presented in Table 1. For the four groups, 47% of people were dating someone steadily and 31% were in a fraternity or sorority. Generally, people were active on their hall, considered most of the group members "friends," and were satisfied with their relationships in high school and in college. Groups had similar means for all of the questions about friendships, but there was a great amount of variability among individuals' answers. Correlational relationships were found among the questions. People who were active on their hall were happier in their same-sex relationships ($r=0.55$, $p<0.01$, $n=64$) and opposite-sex relationships ($r=0.28$, $p<0.05$, $n=64$) people. Those who were happy with their opposite-sex relationships in high school were also happier with their opposite-sex relationships at present ($r=0.31$, $p<0.05$, $n=64$). People who were satisfied with their opposite-sex relationships were also dating someone steadily ($r=0.31$, $p<0.05$, $n=64$).

Procedure

MDS data for the multidimensional scaling analysis were collected via computer, with subjects working individually. The testing consisted of similarity judgments and

TABLE 1

Summary of Questionnaire Responses

QUESTION	GROUP 1	2	3	4
How socially active are you with people on your hall? (9 is very active)	6.0	6.7	6.2	6.6
How satisfied were you in high school in your relationships with the same sex? (9 is very satisfied)	6.4	6.1	6.8	7.6
How satisfied were you in high school in your relationships with the opposite sex? (9 is very satisfied)	7.3	5.8	7.1	6.0
How satisfied are you now in your relationships with the same sex? (9 is very satisfied)	6.9	7.7	6.7	7.2
How satisfied are you now in your relationships with the opposite sex? (9 is very satisfied)	6.7	7.1	7.3	6.7
Are you dating someone steadily right now? (% of yes answers)	68.4	57.4	66.5	61.1
Are you involved in a fraternity or sorority? (% of yes answers)	53.3	47.0	50.1	39.2
Which people in your group would you consider your friend? (% of people selected)	26.7	31.3	28.6	38.9

bipolar ratings, which were presented by a program called PCISIS (Null & Sarle, 1982). The first segment of the study was the similarity scoring program, which generated all possible pairs [n(n-1)/2] of members in the living group and presented them in random order. For a group of 20 members, this resulted in 190 comparisons, plus 10 repeated pairs used to determine reliability. Subjects rated the similarity of each pair of people along an 80-point scale, with lower numbers indicating greater similarity (see Appendix B). Subjects were not given definition for judging similarity. To answer, they moved the cursor along a continuum until they reached a point between the endpoints marked "similar" and "dissimilar" which best described their perception of that pair. The continuum did not display numbers, but points along the line corresponded to 0 through 80.

The second part of the study was a rating program, which involved rating each person on chosen (voluntary) and required (mandatory) personality traits (see Appendix C). Subjects were asked to reveal three features that they used when rating people on similarity. After subjects entered their answers, they were shown a list of 14 other descriptors (Good Sense of Humor, Religious, Introverted, Well Adjusted, Athletic, Hard to Get Along With, Academically Oriented, Reserved, Physically Attractive, Intelligent, Argumentative, Interesting, Anxious, Manipulative). The aspects, which were collected from current literature (Forgas, 1976; Battistich & Thompson, 1980; Wish, Deutsch & Kaplan, 1976), were personality variables salient in an academic and social context. From the list of 17, subjects chose what they thought had been the most important aspect used in their similarity judgments. Then each person's name was presented to them and they rated people on this first aspect, given a continuum with the endpoints "a lot" and "a little". Again, each point on the line corresponded to a number between 0 and 80. The list of 17 characteristics appeared again and they chose the second most important aspect used in their similarity judgments. The same procedure took place until they had chosen 4 aspects and rated everyone in the group on those aspects. Four mandatory traits were also presented, which were 1) How conventional is this person's lifestyle and outlook? 2) How friendly or

sociable is this person? 3) How much does this person control and influence social interaction? 4) How much does this person allow others to know him/her? These four aspects were based on Forgas' (1976) and Battistich and Thompson's (1980) findings on global aspects relevant to person perception in the college environment. Because standard traits were presented, they could be analyzed for their importance in each person's solution.

The last segment of the study involved filling out a two-page background questionnaire (see Appendix D). There were 7 questions asking about past and present friendships with same and opposite sex people, which subjects could respond to by giving a rating from 1 to 9, with 1 being "not at all satisfied" and 9 being "very satisfied". On the second page, subjects were asked to rank order people in the group according to who their friends were. They indicated people whom they considered friends by placing a check next to their names and a zero next to the names of people whom they would not call friends.

After completing all parts of the study, subjects were debriefed, thanked for their participation and dismissed.

RESULTS

Reliability was measured by a built-in test in the similarity scoring program. As the pairs of stimuli were randomly generated, 10 random pairs were presented a second time. The correlation between the first and second answers for the 10 pairs was the measure used to judge a person's overall reliability in answering. Each subject's data reliability was calculated, to determine whether or not a subject answered with consistency. A correlation of at least 0.6 was required for a subject's data to be included in further analysis, because a low correlation indicated that the subject may have reversed the scale at some point during the task or for some other reason given random answers. Group 1 represented one of four halls that participated in this study. This hall was all female, with 20 members, and 15 subjects had reliable data. Group 2 was all female, with 21 members, 16 with reliable data. Group 3 was an all male hall with 20 members, 14 of whom had reliable data. Group 4 was all male, with 25 members and 18 had reliable data. The overall reliability of subjects included in the following analyses was r=0.86, indicating that there may have been some error in subjects' responses but for the most part their similarity scoring was very consistent.

The similarity data were analyzed by one of several MDS analysis packages (Carroll & Chang, 1968; Takane, Young & deLeeuw, 1977; Null & Sarle, 1982). The analysis yielded a geometric configuration of the entities in which the distances corresponded to psychological relatedness. In a study of personality perception involving people as the entities to be scaled, the ratings reflect how similar people's overall personalities seem. MDS transforms a matrix of numbers into a map of distances. The ease of understanding the layout of cities from a map compared to a table of numbers illustrates one benefit of using MDS procedures (Null, 1980).

All MDS solutions are accompanied by the percent of variance explained, stress and a geometric configuration of the items scaled. Kruskal (1964) first calculated stress, which provides a measure of the goodness of fit of a solution. Stress decreases with increasing dimensionality, because the goodness of fit improves as more dimensions are used to represent the input data. Stress, variance explained, and interpretability of the configuration (items clustered instead of spread out) were important measures in determining how to characterize the data. When stress is low and R^2 is high in a group solution, subjects have similar organization of stimuli. A strategy for judging the significance of a configuration produced by a multidimensional analysis is to compare stress and the variance explained by the individual and group solutions (Null & Bloch, 1988).

Reliable data were first analyzed using ALSCAL (Takane, Young & deLeeuw, 1977) from SAS (1982), which produced a group solution based on individuals' similarity data. This analysis combined each group's data and produced a map of the members with distance representing dissimilarity and proximity representing similarity. The outcome of the group analysis was similar for the four freshmen halls. The mean variance explained by a two dimensional solution was 32% and mean stress was 0.35. In three dimensions, the mean variance explained for the solutions was 34% and mean stress was 0.26. Stress was moderately high, but did decrease with the added dimension. Increasing dimensions did not greatly improve R^2 and these low values were unacceptable. When variance accounted for is low, randomness and error are not within a reasonable range and the model's assumptions are not met. The geometric configurations revealed a circular pattern in 2 and 3 dimensions. The configuration depicted group members equidistant from the origin. Group members were not organized along axes or clumped by similarity. When everyone's data was combined, the similarity judgments averaged out and no one was especially similar or different from anyone else. The circular pattern resulted from complexity, indicating that the data could not be understood or interpreted using so few

dimensions. Thus, group solutions did not adequately describe the data and individual solutions were pursued.

To determine the cognitive representations of individual group members, similarity ratings underwent a nonmetric individual differences model of MDS. ALSCAL was applied to the similarity data to determine individual solutions. The specifications for these analyses were that they have a rational, or Torsca start, an ordinal measurement level, data scaled by dissimilarity, and ties of primary, or weak monotone function. This procedure mapped out the similarity data for each individual and was completed in 2, 3, and 4 dimensions. These maps depicted clusters of members, reflecting similarity and difference in the organization. Table 2 displays the R^2 and Stress values for each subject's solution in 2, 3 and 4 dimensions.

For 2-dimensional solutions, the overall means for R^2 were m=0.67 (sd=0.11) and for stress, m=0.25 (sd=0.03). For 3-dimensions, the R^2 m=0.75 (sd=0.09) and stress m=0.17 (sd=0.02). The 4 dimensional solution generated R^2 m=0.81 (sd=0.07) and stress m=0.12 (sd=0.02). Stress dramatically decreased with each added dimension and R^2 was much higher, also increasing with added dimensions. The display of the data was more interpretable, because solutions produced configurations of clusters, instead of circular patterns. For these reasons, it was decided that the individual solutions were most meaningful for describing the data, whereas the group solutions were not.

To test for subgroups of similar individual solutions, the program MOTION (Schonenmann & Carroll, 1970) was run. MOTION compared each individual solution to every other person's solution and was completed in 3 dimensions. The program compared each of the subject's three dimensions to every other person's three dimensions, and calculated the degree of fit between the two solutions. When the normalized symmetric error for these comparisons is close to zero, there is similarity between that pair of solutions. The decision rule used for accepting a subgroup was an error term of less than 0.3. When the error is 0.1 or 0.2, the solutions are sufficiently similar to form a subgroup.

TABLE 2

Reliability for Each Subject and Stress and Variance Explained (R^2) from ALSCAL Analysis for Individual Solutions in 2, 3, and 4 Dimensions

		NUMBER OF DIMENSIONS					
		2D		3D		4D	
SUBJECTS	Rel	Stress	R^2	Stress	R^2	Stress	R^2
GROUP 1							
SPO10	.87	.20	.80	.14	.86	.11	.89
SPO11	.68	.27	.57	.18	.70	.13	.77
SPO14	.94	.25	.69	.16	.80	.12	.84
SPO16	.97	.27	.71	.18	.77	.13	.82
SPO17	.80	.19	.83	.13	.87	.09	.91
SPO18	.88	.25	.65	.17	.71	.13	.78
SPO21	.93	.20	.83	.15	.86	.12	.89
SPO22	.99	.17	.84	.10	.92	.05	.89
SPO23	.70	.27	.58	.19	.67	.13	.75
SPO24	.83	.24	.69	.17	.76	.13	.81
SPO25	.89	.28	.54	.21	.60	.14	.70
SPO26	.80	.25	.67	.17	.79	.12	.85
SPO27	.93	.28	.54	.17	.69	.11	.79
SPO28	.64	.28	.55	.18	.69	.13	.76
SPO29	.95	.27	.65	.18	.71	.14	.77
GROUP 2							
NIC10	.83	.26	.62	.17	.74	.12	.83
NIC11	.83	.16	.85	.12	.89	.07	.94
NIC12	.72	.25	.64	.17	.75	.12	.82
NIC13	.83	.24	.68	.17	.73	.12	.81
NIC14	.74	.27	.57	.17	.72	.13	.76
NIC15	.97	.25	.64	.18	.69	.12	.79
NIC17	.65	.28	.50	.19	.61	.14	.68
NIC19	.94	.29	.51	.20	.61	.14	.72
NIC20	.77	.29	.56	.20	.64	.15	.67
NIC21	.71	.25	.67	.15	.80	.11	.85
NIC23	.98	.19	.81	.14	.85	.09	.91
NIC24	.94	.24	.70	.17	.74	.12	.82
NIC25	.97	.17	.86	.13	.88	.09	.93
NIC27	.89	.23	.71	.16	.79	.12	.84
NIC28	.81	.31	.43	.21	.54	.15	.67
NIC29	.95	.26.	.58	.17	.68	.12	.76
NIC30	.99	.25	.68	.17	.74	.12	.80

TABLE 2 (continued)

		NUMBER OF DIMENSIONS					
		2D		3D		4D	
SUBJECTS	Rel	Stress	R^2	Stress	R^2	Stress	R^2
GROUP 3							
DIN10	.86	.30	.49	.21	.62	.15	.71
DIN11	.99	.27	.54	.20	.64	.14	.75
DIN12	.92	.20	.80	.14	.86	.11	.88
DIN13	.87	.26	.68	.17	.77	.12	.84
DIN15	.70	.30	.52	.19	.71	.14	.78
DIN17	.97	.25	.69	.18	.73	.13	.81
DIN21	.87	.26	.58	.18	.69	.12	.78
DIN23	.94	.21	.78	.15	.83	.12	.87
DIN24	.95	.26	.70	.17	.81	.12	.85
DIN25	.88	.20	.78	.14	.83	.10	.87
DIN26	.73	.20	.80	.13	.86	.10	.90
DIN27	.91	.24	.73	.19	.75	.14	.80
DIN28	.85	.28	.54	.19	.65	.14	.72
DIN29	.79	.27	.56	.18	.71	.12	.80
GROUP 4							
YAT10	.85	.22	.75	.15	.81	.11	.87
YAT12	.89	.30	.52	.21	.60	.16	.67
YAT13	.82	.23	.77	.16	.83	.12	.88
YAT15	.94	.29	.54	.20	.64	.15	.71
YAT16	.95	.25	.69	.18	.74	.13	.80
YAT17	.90	.21	.76	.17	.78	.13	.81
YAT19	.93	.26	.64	.18	.70	.14	.77
YAT20	.95	.28	.58	.19	.65	.15	.69
YAT21	.95	.20	.87	.16	.88	.13	.89
YAT22	.97	.25	.65	.18	.72	.13	.79
YAT23	.98	.26	.60	.19	.68	.15	.71
YAT24	.74	.26	.62	.16	.78	.12	.84
YAT25	.62	.24	.68	.18	.73	.14	.75
YAT28	.91	.25	.72	.17	.80	.13	.84
YAT29	.75	.21	.76	.15	.81	.12	.84
YAT32	.97	.24	.69	.16	.77	.13	.82
YAT33	.78	.23	.77	.16	.85	.12	.89
YAT34	.77	.23	.73	.16	.78	.13	.80

The error terms ranged from 0.38 to 0.86 and the mean value was 0.66 (sd=0.1) for all four groups. These values represented a poor fit of the individual solutions with others, suggesting that no two subjects conceptualized others in a similar manner. To illustrate this, Figure 1 and 2 depict two people's solutions in 2 dimensions. It is clear that the arrangement of the group varies based on these two configurations. Thus, no pair of people had similar solutions and subgroups of solutions were not formed.

The next analysis compared the individual MDS configurations to the rating vectors. A weighted Euclidean model designed to rescale data for each subject was employed to account for both between-subject differences in person perception and subjects' use of the rating scale. PROFIT (Chang & Carroll, 1968) was completed in 2, 3 and 4 dimensions, which found the best fit of vectors with the dimensions used in each person's configuration. This analysis determined which aspects aided in explaining the similarity configurations, based on the 4 voluntary aspects and the 4 mandatory aspects. This program projected the vectors of the personality aspects rated by subjects onto the MDS space and calculated a correlation for each rating vector. Fit was measured by the correlation between the ratings of people on a given aspect and their placement in the MDS space. These correlations represented the importance of each dimension in the MDS space. For purposes of clarity, these correlations will be referred to as Rho, or ρ, values to distinguish them from other correlations. Also for clarity, personality dimensions will be referred to as aspects, to distinguish them from the number of dimensions used in individual solutions. The PROFIT analysis also produced vector weights, which indicated how the 8 aspects fit into the 2, 3 or 4 dimensional solution.

When deciding on the number of dimensions to allow for individual configurations, the criterion was that the solution adequately represent the input data with as few dimensions as possible (Kruskal & Wish, 1978). The rate at which stress decreases with increasing dimensionality or the dimensionality after which there is little improvement in fit was useful in determining optimal dimensionality (Kruskal & Wish, 1978). R^2 and stress

FIGURE 1

Stimulus Configuration for NIC23 as Revealed by an ALSCAL Analysis in 2 Dimensions

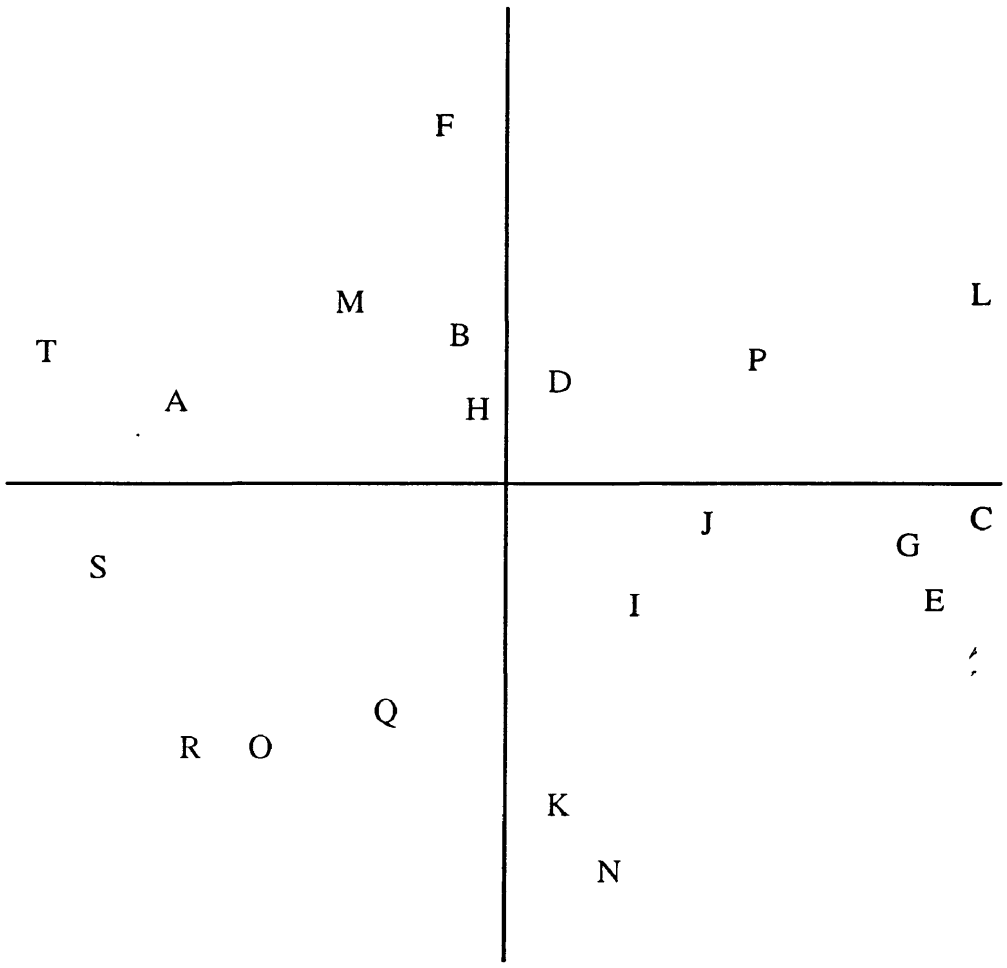
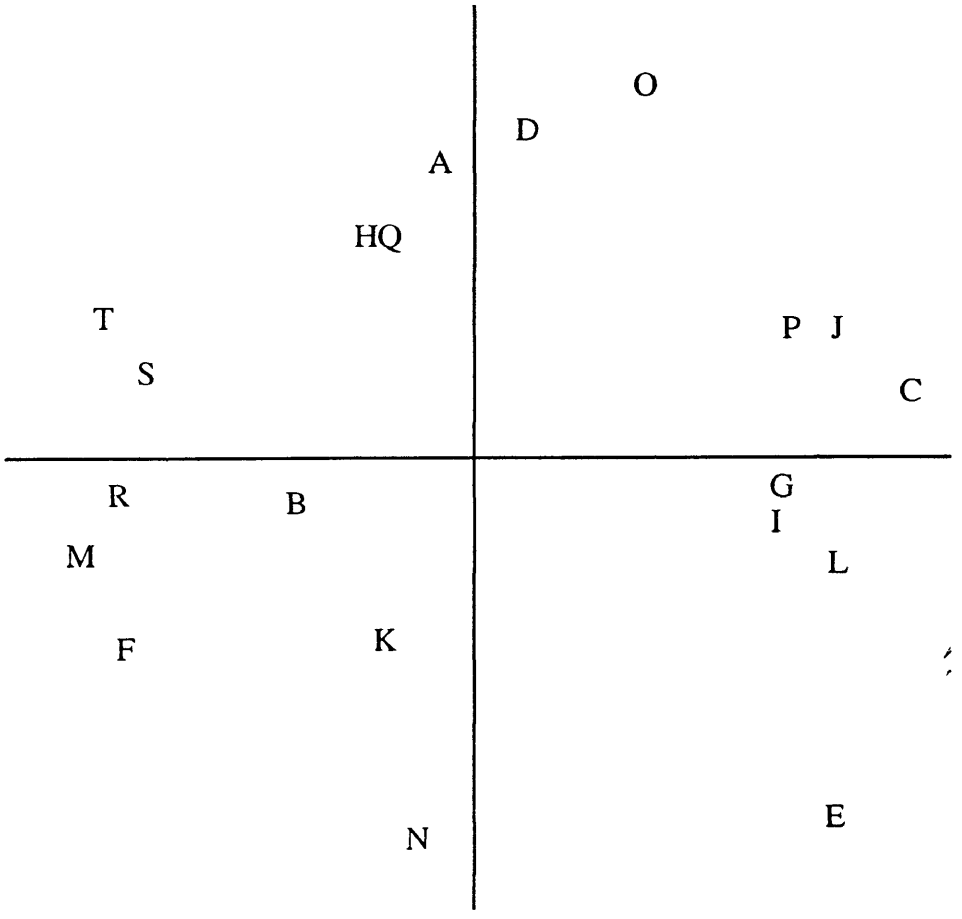


FIGURE 2

Stimulus Configuration for NIC25 as Revealed by an ALSCAL Analysis in 2 Dimensions



from the ALSCAL analysis and vector weights from the PROFIT analysis were used to decide how many dimensions were necessary to describe each person's data adequately. Decisions were made based on the following criteria: R^2 of 0.66 or above, with two-thirds of the variance explained by the solution; a stress value of at most 0.3, accepting the dimensionality just before the decrements in stress become negligible (i.e., 0.01); and good clarity of dimensions as determined by a vector weighing heavily on each dimension in the solution, with a value of at least 0.6, but preferably 0.8 or 0.9. Clarity is needed to name a dimension and naming helps make sense of the person's organizing aspects. A vector weight of 0.6 indicated that the aspect had a reasonable prominence in the subject's conceptualization of the group.

There must have been a compelling reason to increase dimensionality, which essentially makes solutions more difficult to interpret. A dramatic improvement in the clarity of dimensions, stress or R^2, without the increase degrading any other measure was a reason to accept higher dimensionality. For example, the decision about dimensionality for SPO24 rested primarily on clarity. The question was whether to accept 3 or 4 dimensions. There was a 0.5 increase in R^2 (from 0.76 to 0.81) and stress decreased from 0.17 to 0.13 with the added fourth dimension, which were substantial changes. But the three dimensional solution had 3 well-defined dimensions, whereas in 4 dimensions the high vector weights fell on one dimension, leaving 3 poorly-defined. When the vector weights were considered, it was clear that the 3 dimensional solution was better overall.

By establishing guidelines for decision-making, dimensionality was different for each subject, but R^2, stress, and clarity for each subject's solution were similar. The overall mean for all groups was m=0.76 (sd=0.06) for R^2 and m=0.17 (sd=0.03) for stress. Table 3 shows the dimensionality chosen for each person's data, as well as ρ values for the mandatory aspects from PROFIT. Vector weights of 0.6 or more were prominent in explaining the dimensions for each person's solution. These values are presented in Table 4.

TABLE 3

Dimensionality Chosen for Individual Solutions and Accompanying Rho (ρ) Values for Mandatory Aspects from PROFIT Analysis

				MANDATORY ASPECTS			
				Conventional	Friendly	Controlling	Open
SUBJECTS	Dim	Stress	R^2	1	2	3	4
GROUP 1							
SPO10	3	.14	.86	.91	.52	.47	.56
SPO11	4	.13	.77	.86	.48	.72	.56
SPO14	3	.16	.80	.68	.50	.83	.46
SPO16	2	.27	.71	.57	.92	.69	.60
SPO17	2	.19	.83	.71	.84	.66	.49
SPO18	3	.17	.71	.60	.30	.53	.43
SPO21	2	.20	.83	.82	.59	.53	.30
SPO22	3	.10	.92	.67	.40	.63	.26
SPO23	4	.13	.75	.72	.50	.31	.26
SPO24	3	.17	.76	.77	.41	.86	.45
SPO25	4	.14	.70	.81	.62	.51	.58
SPO26	3	.17	.79	.43	.57	.55	.41
SPO27	3	.17	.69	.77	.48	.66	.44
SPO28	4	.13	.76	.49	.61	.46	.28
SPO29	3	.18	.71	.71	.49	.60	.79
GROUP 2							
NIC10	3	.17	.74	.77	.78	.84	.78
NIC11	3	.12	.89	.66	.88	.79	.84
NIC12	3	.17	.75	.64	.56	.40	.33
NIC13	3	.17	.73	.58	.75	.78	.75
NIC14	3	.17	.72	.62	.70	.71	.65
NIC15	3	.18	.69	.67	.71	.87	.75
NIC17	4	.14	.68	.71	.73	.67	.70
NIC19	4	.14	.72	.76	.86	.70	.80
NIC20	4	.15	.67	.42	.48	.55	.44
NIC21	4	.11	.85	.61	.78	.84	.83
NIC23	2	.19	.81	.31	.85	.41	.86
NIC24	3	.17	.74	.70	.89	.54	.84
NIC25	2	.17	.86	.81	.81	.57	.72
NIC27	3	.16	.79	.84	.74	.69	.62
NIC28	4	.15	.67	.55	.35	.72	.53
NIC29	4	.12	.76	.52	.78	.47	.61
NIC30	3	.17	.74	.90	.89	.61	.95

TABLE 3 (continued)

SUBJECTS	Dim	Stress	R^2	MANDATORY ASPECTS			
				Conventional 1	Friendly 2	Controlling 3	Open 4
GROUP 3							
DIN10	4	.15	.71	.55	.59	.63	.54
DIN11	4	.14	.75	.70	.85	.65	.48
DIN12	3	.14	.86	.83	.88	.87	.87
DIN13	3	.17	.77	.71	.78	.74	.78
DIN15	3	.19	.71	.68	.72	.76	.80
DIN17	3	.18	.73	.78	.95	.88	.58
DIN21	4	.12	.78	.75	.69	.57	.72
DIN23	2	.21	.78	.43	.33	.48	.53
DIN24	3	.17	.81	.50	.57	.13	.39
DIN25	2	.20	.78	.38	.44	.77	.38
DIN26	2	.20	.80	.69	.60	.61	.40
DIN27	3	.19	.75	.70	.81	.64	.66
DIN28	4	.14	.73	.25	.54	.53	.50
DIN29	3	.18	.71	.61	.50	.35	.55
GROUP 4							
YAT10	2	.22	.75	.70	.55	.55	.66
YAT12	4	.16	.76	.73	.89	.83	.77
YAT13	2	.23	.77	.90	.65	.72	.69
YAT15	4	.15	.71	.74	.62	.51	.89
YAT16	3	.18	.74	.45	.27	.58	.57
YAT17	2	.21	.76	.86	.86	.35	.73
YAT19	3	.18	.70	.58	.34	.36	.51
YAT20	4	.15	.69	.80	.59	.67	.66
YAT21	2	.20	.87	.79	.93	.87	.85
YAT22	3	.18	.72	.46	.69	.67	.78
YAT23	4	.15	.71	.34	.48	.61	.58
YAT24	3	.16	.78	.72	.73	.66	.58
YAT25	3	.18	.73	.80	.58	.86	.69
YAT28	3	.17	.80	.64	.27	.79	.56
YAT29	3	.15	.81	.67	.58	.79	.78
YAT32	3	.16	.77	.91	.82	.79	.84
YAT33	3	.16	.85	.83	.48	.62	.52
YAT34	3	.16	.78	.56	.75	.76	.76

TABLE 4

Vector Weights of 0.6 or Above of Voluntary and Mandatory (*) Aspects from PROFIT Analysis for Individual Solutions in 2, 3 or 4 Dimensions

	DIMENSIONS			
SUBJECT	1	2	3	4
SPO10	Genuine .94 Party .96 Caring .96 *Conventional .87 Manipulative .74 *Controlling .68	*Friendly .85 *Open .7	Manipulative .6	
SPO11	Introverted .89 Academic .85 *Friendly .77 *Controlling .79 *Open .67	*Conventional .92 HardGetAlong .61	HardGetAlong .71	
SPO14	Morals .95 *Conventional .82 *Friendly .67 Friendliness .66 *Friendly .67	Personality .92 Interesting .96 *Open .98 *Controlling .76		
SPO16	Compassion .98 HardGet Along .99 Humor .99 *Conventional .85 *Friendly .99 *Controlling .88 *Open .99	Friendliness .91		
SPO17	Intelligent .99 *Conventional .93 Humor .71 Friendliness .78 Interesting .65 *Friendly .67	*Controlling .96 *Open .93 Humor .71 Friendliness .62 Interesting .76 *Friendly .75		
SPO18	Compatible .78 *Friendly .77 *Open .78 Well Adjusted .61 *Controlling .67 Humor .73 Interesting .72	*Conventional .96 *Controlling .69 Humor .61	Well Adjusted .77	

TABLE 4 (continued)

SUBJECT	DIMENSIONS 1	2	3	4
SPO21	Humor .98 *Friendly .99 Unselfish .73 Responsible .72 Manipulative .71 *Controlling .62 *Open .65	*Conventional .99 Unselfish .68 Responsible .69 Manipulative .7 *Controlling .78 *Open .76		
SPO22	Manipulative .95 *Conventional .88 *Controlling .89 *Open .97 Anxious .79 Intelligent .74	Interesting .83	*Friendly .87	
SPO23	LivingHabits .88 HardGetAlong .81 Humor .96 *Controlling .89 *Friendly .75	Reserved .7 *Conventional .78 *Open .8 *Friendly .64		
SPO24	Morals .84 Religious .86	*Conventional .7 Academic .61	*Friendly .83	
SPO25	Religious .79 *Friendly .81 *Controlling .86 Introverted .66	Humor .81 *Conventional .84 *Open .79	Manipulative .83	
SPO26	Outgoing .72 Reserved .69 *Controlling .68 *Controlling .67 Outgoing .67	Disposition .99 Activities .83 *Open .82	*Conventional .96 *Friendly .81	
SPO27	Friendly .91 Introverted .96 Humor .99 Interesting .88 *Conventional .97 *Friendly .96 *Controlling .98 *Open .96			

TABLE 4 (continued)

SUBJECT	DIMENSIONS 1	2	3	4
SPO28	*Open .7 Attractive .92 *Friendly .81 *Controlling .8	Academic .89 *Open .64	Introverted .81 *Convention.76	Assertive .8
SPO29	*Controlling .99 Morals .89 *Conventional .63 Living Habits .72 HardGetAlong .72	HardGetAlong .65 *Open .64 *Conventional .68 Living Habits .68	Personality .93 *Friendly .79	
NIC10	Intelligent .99 Academic .98 *Friendly .97 *Open .99 *Conventional .87 *Controlling .77 Interesting .69 Attitude .83	Interesting .73 *Controlling .63		
NIC11	*Controlling .74 Attractive .81 *Friendly .81 Reserved .8 *Conventional .81 *Controlling .66	Interesting .88 *Conventional .86 *Open .85	Superficiality .82	
NIC12	Reserved .93 Anxious .94 HardGetAlong .62 *Conventional .64 HardGetAlong .76	Academic .67 *Conventional .77 *Open .96	*Friendly .99 *Controlling .94	
NIC13	Interesting .99 Friendly .92 WellAdjusted .95 *Friendly .93 *Open .94 *Conventional .61 *Controlling .78	Values .72 *Controlling .62	*Conventional .68	

TABLE 4 (continued)

SUBJECT	DIMENSIONS 1	2	3	4
NIC14	Friendly .61 Religious .61 *Conventional .62 *Controlling .67 *Conventional .77 *Controlling .73 Friendliness .8 Religious .76	Academic .97 Humor .88 *Friendly .89 *Open .95		
NIC15	Outgoing .92 Personality .93 Compatible .88 *Controlling .97 *Friendly .84 *Open .7	*Open .71 *Conventional .77	Academic .70	
NIC17	Physical aspects .77 *Friendly .66 *Controlling .68 *Open .74 *Controlling .71 *Open .66	*Conventional .87 Personality .83 Humor .73 *Friendly .61	Kind/Cooperative .78	
NIC19	Athletic .64 Personality .61 Humor .71 *Conventional .82 *Friendly .61 *Controlling .68	Athletic .76 Personality .76	*Friendly .62 *Open .62	Academic .78
NIC20	Fun .76 Interesting .83 Attractive .76 *Controlling .64 *Open .66	*Friendly .71 *Open .7 Fun .62 Attractive .62 *Controlling .72	Superficiality .92 *Conventional .94	
NIC21	Friendliness .68 Academic .78 *Conventional .85	Introverted .67 *Friendly .72 *Controlling .81	Well Adjusted .69	
NIC23	Personality .98 Reserved .86 HardGetAlong .97 Academic .87 *Friendly .97 *Open .98 *Conventional .76	*Conventional .65 *Controlling .93		

TABLE 4 (continued)

SUBJECT	DIMENSIONS 1	2	3	4
NIC24	PositiveAttitude .96 Attractive .95 *Friendly .89 *Open .86 HowTreatOthers .84	*Controlling .94 *Conventional .74	AttitudeStudying .81	
NIC25	Intelligent .97 HardGetAlong .9 Humor .79 *Conventional .93 *Friendly .86 *Open .95	PersonalHabits .83 *Controlling .92 Humor .62		
NIC27	Friendly .85 Cooperative .87 *Conventional .97 *Open .78 Reserved .71	Introverted .87 *Friendly .95 *Controlling .89	*Open .61	
NIC28	HardGetAlong .88 Academic .83 *Conventional .64 *Controlling .69	Understanding .95 *Open .77 *Controlling .67	Humor .64 *Friendly .64	
NIC29	*Conventional .82 HardGet Along .75 *Open .69 *Open .6	Friendly .7 *Friendly .89 *Controlling .99	Interesting .71 Tolerant .61	Interésting .6
NIC30	Values .99 *Conventional .83 *Friendly .97 *Open .98	Interests .71 Athletic .74 WellAdjusted .74	Athletic .61 *Controlling .60	
DIN10	*Conventional .69 *Friendly .83 Interesting .9 Conventional .62 *Controlling .83	Athletic .81* Attractive .86	HardGetAlong .74	Open .76
DIN11	Personality .91 Intelligent .95 HardGetAlong .96 Considerate .86 *Conventional .62 *Friendly .86 *Open .86	*Controlling .64	*Conventional .69	

TABLE 4 (continued)

SUBJECT	DIMENSIONS 1	2	3	4
DIN12	Outgoing .84 Academic .77 *Conventional .76 *Controlling .83	HardGetAlong .88 *Friendly .89 *Open .88 *Conventional .62	Intelligent .76	
DIN13	Humor .99 Introverted .87 Interesting .94 *Controlling .91 *Open .93 *Friendly .8	HardGetAlong .75	*Conventional .89	
DIN15	HardGetAlong .68 *Conventional .73 *Controlling .67 *Controlling .7 *Open .61	LikeThem .86 *Friendly .79 *Conventional .61	TheirBehavior.7 HardGetAlong .7 (No Label) .75	
DIN17	Humor .99 Academic .73 *Friendly .95 *Controlling .97 *Open .83 Argumentative .63	Truthful .71 Academic .67 *Conventional .97	Truthful .63 Argumentative .77	
DIN21	Interesting .62 *Conventional .68 Individuality .8 *Friendly .77 *Controlling .86 *Open .82	WellAdjusted .84 Interesting .64	Manipulative .86	
DIN23	Honest .82 Friendly .99 Manipulative .68 *Friendly .9 *Controlling .96 *Open .69	Interesting .96 Manipulative .74 *Conventional .85 *Open .72		
DIN24	DrinkingBeliefs .84 *Open .97 *Conventional .93 *Friendly .62	Personality .97 HardGetAlong .96 *Controlling .76	Intelligent .89 *Friendly .72	

TABLE 4 (continued)

SUBJECT	DIMENSIONS 1	2	3	4
DIN25	Manipulative .96 Lawful .99 *Controlling .99 Loudness .94 Argumentative .73 *Open .67	Argumentative .69 *Conventional .97 *Friendly .99 *Open .75		
DIN26	Humor .79 *Conventional .92 *Controlling .99 *Open .98 Academic .61	Amicability .99 Manipulative .81 Academic .79 *Friendly .73 Humor .61		
DIN27	Personality .99 Athletic.9 Intelligent .83 *Friendly .91 *Controlling .98 *Open .78	Manipulative .94 *Conventional .99		
DIN28	Humor .61 *Controlling .6 *Friendly .86 *Open .93	Intelligent .71* Academic .69	Intelligent .64 Interesting .73	*Convention.81
DIN29	Humor .66 HardGetAlong .83 *Controlling .9 Cooperation .68 *Conventional .77	RespectOthers .86 *Open .94 Humor .7 Cooperation .72	*Friendly .9	
YAT10	*Controlling .85 RespectOthers .99 Humor .93 HardGet Along .94 *Conventional .99 *Friendly .85 *Open .94	Friendliness .99		
YAT12	Introverted .88 *Conventional .89 *Friendly .8 *Controlling .72 *Open .85	Friendliness .79 HelpOthers .64 HardGetAlong .66		

TABLE 4 (continued)

SUBJECT	DIMENSIONS 1	2	3	4
YAT13	Humor .9 HardGetAlong .96 *Friendly .99 *Open .92	Academic .98 Introverted .88 *Conventional .85 *Controlling .82		
YAT15	EasyGoing .75 Interesting .61 *Open .69	*Friendly .64 *Controlling .74 *Open .62	Humor .69 Interesting .7	*Conventional .93 *Controlling .62
YAT16	*Open .7 HardGetAlong .93 *Friendly .84 *Conventional .91	WellAdjusted .99 *Controlling .85	Humor .85	
YAT17	Friendliness .84 Academic .99 Trustworthy .85 Interesting .97 *Conventional .89 *Friendly .95 *Open .99	*Controlling .96		
YAT19	Interesting .87 Reserved .98 Humor .62 *Conventional .77 *Friendly .6	*Controlling .87 *Open .93 Humor .7 *Friendly .61	Athletic .88 *Conventional .63	
YAT20	Athletic .65 Humor .72 *Friendly .79 *Open .79	Intelligent .97 *Conventional .87 *Controlling .65	Interesting .62	
YAT21	Interesting .94 Athletic .87 Humor .93 Introverted .91 *Conventional .99 *Friendly .86 *Controlling .9 *Open .81			

TABLE 4 (continued)

SUBJECT	DIMENSIONS 1	2	3	4
YAT22	HardGetAlong .76 *Friendly .62 Humor .84 *Friendly.76 *Controlling.89 *Open.85	Introverted .70 Humor .99	*Conventional .84	
YAT23	Academic .83 Athletic .71 Intelligent .72 *Conventional .71 *Controlling .71	Attractive .88 *Open .74	*Friendly .81 Intelligent .67	Athletic .61
YAT24	Introverted .94 Materialistic .81 *Friendly .88 *Open .87 *Controlling .78	Religious .92 *Conventional .89 WellAdjusted .71	Materialistic .53 *Controlling .51	
YAT25	Athletic .94 *Friendly .88 *Controlling .85 *Open .82 Introverted .78	Academic .81 *Conventional .82 Intelligent .66	Intelligent .76	
YAT28	Humor .99 *Controlling .98 *Open .8 HardGetAlong .69 WellAdjusted .76	HardGetAlong .63 *Friendly .77 Genuine .68	*Conventional .83	
YAT29	Athletic .91 *Controlling .9	Sincerity .97 *Conventional .88	Introverted .79 *Friendly .60	
YAT32	Introverted .91 Athletic .87 *Friendly .62 *Controlling .71 *Open .62 Social Activity .75	Type of Student .92 *Conventional .98 Social Activity .63 *Friendly .74 *Controlling .7 *Open .78		
YAT33	Introverted .92 *Controlling .88 *Open .73 StudyHabits .62 Academic .66	*Conventional .91 *Friendly .62 StudyHabits .68	Anxious .78 *Friendly .78	
YAT34	Introverted .99 *Controlling .94	HardGetAlong .97 *Friendly .99	*Conventional .60 *Open .79	

Results of ALSCAL and MOTION analyses suggested that no two people were alike in how they conceptualized members of the same group. People did not have the same stimulus configurations, which does not support a nomothetic analysis. This leaves open the possibility that each person has a unique cognitive framework, which is not similar to any other framework. Using information from PROFIT to compare solutions, it was predicted that subjects' frameworks were similar in some ways. It may be that individuals use the same cognitive dimensions, but place the stimuli differently along these dimensions. This would support the idiographic perspective.

The groups were compared to see how they were similar and how they were distinctive. This was done because each group may have been so individualized that it represented an entirely different arrangement than another group. Evidence for this distinction would suggest that there was a group response style, which made people within a group more similar than would occur by chance. If this were false, then it would not matter what group a subject was in, because their data would be unrelated to every other group members' data. Thus, there would be as many groups as subjects. Subjects could be collapsed across group for analyses on mandatory dimensions, selected dimensions, and other traits of importance.

A Chi-square analysis was done to see if the frequency of dimensions chosen for individual solutions differed by group. The data used for this analysis appears in Table 5. For all four groups, 3 dimensional solutions were chosen the most, with a handful of 2 and 4 dimensional solutions. The analysis revealed no significant difference by group in the frequency with which 2, 3, and 4 dimensions were chosen (Pearson X^2 (6)=1.22, $p>0.05$). This means that groups did not differ in the complexity of their data.

Rho values for mandatory dimensions and the intercorrelations among the ρ values were converted to z scores, which are presented as group means in Tables 6 and 7. There were noticeable differences among groups, suggesting that there may have been group response styles. The importance of each mandatory aspect varied systematically by group.

TABLE 5

Group Frequencies of Dimensions Chosen for Individual Solutions

	NUMBER OF DIMENSIONS		
	2	3	4
GROUP			
1	3	8	4
2	2	9	6
3	3	7	4
4	4	10	4
Mean	3.00	8.50	4.50
SD	.71	1.12	.87

TABLE 6

Group Means and Ranges of Raw and Transformed Rho (ρ) Values and Percentages of Rho Values 0.6 and Above for Mandatory Aspects from PROFIT Analysis in 2, 3 or 4 Dimensions

MANDATORY ASPECTS

	Conventional 1	Friendly 2	Controlling 3	Open 4
GROUP 1				
Raw Means	.70	.55	.60	.46
Raw Ranges	.43 to .91	.30 to .92	.31 to .86	.26 to .79
% greater than .6	80	26.7	53.3	13.3
Transformed Means	.92	.67	.73	.51
Transformed Ranges	.46 to 1.53	.31 to 1.62	.32 to 1.31	.26 to 1.06
GROUP 2				
Raw Means	.65	.74	.66	.71
Raw Ranges	.31 to .9	.35 to .89	.4 to .87	.33 to .95
% greater than .6	70.6	82.4	64.7	82.4
Transformed Means	.82	1.01	.83	.95
Transformed Ranges	.33 to 1.5	.37 to 1.43	.43 to 1.33	.34 to 1.79
GROUP 3				
Raw Means	.61	.66	.61	.58
Raw Ranges	.25 to .83	.322 to .95	.13 to .87	.37 to .86
% greater than .6	64.3	57.1	64.3	35.7
Transformed Means	.75	.88	.78	.71
Transformed Ranges	.25 to 1.2	.34 to 1.84	.14 to 1.35	.39 to 1.31
GROUP 4				
Raw Means	.69	.61	.67	.69
Raw Ranges	.34 to .91	.26 to .93	.35 to .87	.5 to .89
% greater than .6	72.2	50	72.2	66.7
Transformed Means	.92	.8	.85	.88
Transformed Ranges	.36 to 1.5	.27 to 1.69	.37 to 1.35	.56 to 1.43

TABLE 7

Group Means and Ranges of Raw and Transformed Rho (ρ) Values of Intercorrelations for Mandatory Aspects from PROFIT Analysis in 2, 3, or 4 Dimensions

	PAIRED MANDATORY ASPECTS					
	1-2	1-3	1-4	2-3	2-4	3-4
GROUP 1						
Raw Means and Ranges	.46 (-.78 to .99)	.01 (-.98 to .92)	.15 (-.89 to .87)	.76 (-.83 to .99)	.89 (-.26 to .99)	.87 (-.01 to .99)
Transformed Means and Ranges	.49 (-1.04 to 2.83)	.01 (-1.44 to 1.58)	.15 (-1.43 to 1.35)	.99 (-1.18 to 2.51)	1.42 (-.27 to 3.8)	1.31 (-.01 to 3.25)
GROUP 2						
Raw Means and Ranges	.13 (-.95 to .97)	-.08 (-.96 to .96)	.16 (-.94 to .97)	.84 (-.21 to .98)	.95 (.53 to .99)	.84 (.43 to .99)
Transformed Means and Ranges	.13 (-1.83 to 2.06)	-.08 (-1.97 to 1.95)	.16 (-1.71 to 2.13)	1.22 (-.21 to 2.23)	1.81 (.59 to 3.11)	1.23 (.45 to 3.11)
GROUP 3						
Raw Means and Ranges	.47 (-.78 to .97)	.14 (-.88 to .99)	.14 (-.97 to .94)	.34 (-.99 to .99)	.84 (.12 to .99)	.60 (-.87 to .96)
Transformed Means and Ranges	.5 (-1.05 to 2.03)	.14 (-1.46 to 2.83)	.14 (-2.17 to 1.75)	.35 (-2.83 to 3.11)	1.23 (.12 to 3.11)	.69 (-1.34 to 1.97)
GROUP 4						
Raw Means and Ranges	.75 (-.28 to .99)	.18 (-.82 to .83)	.63 (-.59 to .98)	.62 (-.49 to .99)	.81 (-.83 to .99)	.84 (.06 to .99)
Transformed Means and Ranges	.96 (-.29 to 2.99)	.18 (-1.14 to 1.19)	.55 (-.68 to 2.41)	.72 (-.53 to 3.25)	1.12 (-1.2 to 3.45)	1.22 (.06 to 2.99)

The intercorrelations revealed the relationships among the mandatory aspects and it seemed that groups perceived the aspects differently. Several repeated-measures MANOVA by group were computed on the transformed ρ values and transformed intercorrelations among ρ values. The analyses tested whether the four groups differed significantly on the importance of and relationships among the mandatory dimensions.

Further differences among groups were found. A MANOVA analysis revealed a significant difference among the four groups on the importance of the mandatory aspects ($F(9,180)=3.34$, $p<.01$). When the female groups were analyzed using independent t-tests, the second and fourth aspects were both significantly different ($t(30)=3.03$, $p<.01$ and $t(30)=4.25$, $p<.01$, respectively). There were no significant differences between the male groups on the importance of mandatory aspects, using independent t-tests. When subjects were grouped by male and female, the importance of the mandatory aspects were not significantly different. Thus, the significant difference for the mandatory aspects could not be explained by sex; one female group used the second and fourth aspects more than the other three groups.

A MANOVA analysis revealed a significant difference among the four groups on the intercorrelations among the mandatory aspects ($F(15, 300)=1.97$, $p<.05$). When subjects were grouped by male and female, the intercorrelations were significantly different ($F(5,310)=4.29$, $p<.01$). When t-tests were done on the two female groups, there were no significant differences among intercorrelations. The same was true for the two male groups. The significant difference for intercorrelations was therefore explained by sex. In the relationships established among the mandatory aspects, the female halls were similar and the male halls were similar, but males and females were different from each other. These group analyses revealed that the mandatory dimensions were differentially important to groups. Individuals interpreted the dimensions differently and the dimensions varied in their utility to individuals' solutions. Thus, subjects could not be collapsed across groups at all.

It was predicted that the four mandatory aspects would play an important role in explaining individuals' solutions. Mean ρ values were m=0.66 (sd=0.15) for conventionality, m=0.64 (sd=0.18) for friendliness, m=0.64 (sd=0.16) for being controlling, and m=0.62 (sd=0.17) for intimacy. ρ values were considered important in explaining the data with a value of 0.6 or above. The mean percentages of ρ values greater than 0.6 were 71.8% (sd=6.55) for conventionality, 54.0% (sd=22.6) for friendliness, 63.5% (sd=7.85) for being controlling, and 49.5% (sd=31.0) for intimacy. These values suggest that all four aspects were important in explaining solutions. Between 50 to 70% of people used the mandatory aspects to organize people in their group. Individual groups and individual solutions should be considered to determine the salience of any one aspect, because of the amount of variation reflected in the mean.

Also worthy of note are the extent of the intercorrelations of the four mandatory aspects. For all four groups, friendliness and intimacy allowed were correlated (r=0.87, n=64) and controlling and allowing intimacy were correlated (r=0.79, n=64). For some of the groups, conventionality and friendliness (r=0.56, n=48), conventionality and intimacy allowed (r=0.63, n=18), and friendly and controlling (r=0.74, n=50) were correlated. Again, these correlations varied by group and each combination of interrelationships are best understood by attention to individual groups and even individual solutions.

The aspects chosen by each subject to explain judgments of similarity were highly variable. The importance of these aspects varied greatly, as well. Voluntary aspects and Rho values for each subject are presented in Table 8. Individual solutions were not analyzed to determine the salience of voluntary aspects to the MDS space, because of variability. Some general observations were made about the voluntary aspects. First of all, the 3 aspects subjects generated to explain their similarity judgments were not always chosen once the list of 17 traits were presented. Subjects probably used global characteristics for their judgments, but when asked what these characteristics were, they broke them up into pieces. For example, "attractiveness" may have been a salient

TABLE 8

Voluntary Aspects and Rho Values from PROFIT for Individual Solutions in 2, 3 or 4 Dimensions

	VOLUNTARY ASPECTS			
SUBJECTS	1	2	3	4
GROUP 1				
SPO10	.91	.88	.85	.88
	*Genuineness	*Amount of Partying	*Caring for Others	Manipulative
SPO11	.53	.77	.62	.65
	*Personalities	Introverted	Academically Oriented	Hard to Get Along With
SPO14	.55	.84	.51	.44
	*Personality	*Morals	Interesting	*Friendliness
SPO16	.65	.89	.90	.43
	*Compassion	Hard to Get Along With	Good Sense of Humor	*Friendliness
SPO17	.73	.79	.79	.77
	Good Sense of Humor	Intelligent	*Friendliness	Interesting
SPO18	.23	.30	.30	.35
	*Compatibility	Good Sense of Humor	Interesting	Well Adjusted
SPO21	.67	.58	.83	.51
	Good Sense of Humor	*Unselfishness	*Responsible	Manipulative
SPO22	.55	.62	.00	.41
	Manipulative	Anxious	Interesting	Intelligent
SPO23	.73	.83	.57	.65
	*Living Habits	Hard to Get Along With	Reserved	Good Sense of Humor
SPO24	.59	.78	.79	.64
	*How Outgoing	Academically Oriented	*Morals and Values	Religious
SPO25	.50	.61	.48	.73
	Good Sense of Humor	Manipulative	Religious	Introverted
SPO26	.72	.65	.50	.35
	*Outgoingness	*Disposition	*Activities	Reserved
SPO27	.48	.29	.58	.51
	*Friendliness	Introverted	Good Sense of Humor	Interesting
SPO28	.31	.31	.52	.14
	Academically Oriented	*Assertiveness	Physically Attractive	Introverted
SPO29	.29	.59	.70	.58
	*Personality	Hard to Get Along With	*Morals	*Living Habits

*Aspect that Subject Generated and Chose for Rating

TABLE 8 (continued)

	VOLUNTARY ASPECTS			
SUBJECTS	1	2	3	4
GROUP 2				
NIC10	.73	.82	.69	.75
	Interesting	*Attitude	Intelligent	Academically Oriented
NIC11	.34	.83	.81	.59
	*Superficiality	Reserved	Interesting	Physically Attractive
NIC12	.68	.48	.73	.39
	Hard to Get Along With	Academically Oriented	Reserved	Anxious
NIC13	.65	.70	.77	.81
	*Values	Interesting	*Friendliness	Well Adjusted
NIC14	.71	.59	.62	.49
	*Friendliness	Academically Oriented	Good Sense of Humor	Religious
NIC15	.84	.85	.85	.73
	*Outgoingness	*Personality	*Compatibility	Academically Oriented
NIC17	.73	.74	.84	.69
	*Personality	*Kindness/Cooperation	*Physical Aspects	Good Sense of Humor
NIC19	.55	.87	.66	.83
	Athletic	*Personality	Academically Oriented	Good Sense of Humor
NIC20	.63	.62	.59	.75
	*Superficiality	*Fun	Interesting	Physically Attractive
NIC21	.81	.82	.75	.75
	*Friendliness	Well Adjusted	Academically Oriented	Introverted
NIC23	.79	.61	.82	.93
	*Personality	Reserved	Hard to Get Along With	Academically Oriented
NIC24	.88	.91	.79	.88
	*Positive Attitude Towards Life	*How They Treat Others	*Attitude Towards Studying	Physically Attractive
NIC25	.60	.90	.82	.62
	*Personal Habits	Hard to Get Along With	*Sense of Humor	Intelligent
NIC27	.82	.86	.80	.68
	*Friendliness	*Cooperation	Introverted	Reserved
NIC28	.41	.57	.52	.67
	*Understanding	Hard to Get Along With	Academically Oriented	Good Sense of Humor
NIC29	.80	.72	.51	.28
	*Friendly	Interesting	*Tolerant	Hard to Get Along With
NIC30	.92	.34	.53	.68
	*Values	*Interests	Athletic	Well Adjusted

*Aspect that Subject Generated and Chose for Rating

TABLE 8 (continued)

	VOLUNTARY ASPECTS			
SUBJECTS	1	2	3	4
GROUP 3				
DIN10	.47	.64	.63	.53
	Athletic	Hard to Get Along With	Physically Attractive	Interesting
DIN11	.80	.85	.87	.84
	*Personality	Intelligent	Hard to Get Along With	*Consideration of Others
DIN12	.86	.77	.86	.71
	*Outgoing	Intelligent	Hard to Get Along With	Academically Oriented
DIN13	.84	.55	.82	.85
	Good Sense of Humor	Introverted	Interesting	Hard to Get Along with
DIN15	.50	.80	.77	.00
	*If I Like Them	*Their Behavior	Hard to Get Along With	(No Label)
DIN17	.71	.66	.51	.94
	*Truthfulness	Academically Oriented	Argumentative	Good Sense of Humor
DIN21	.77	.86	.83	.88
	Well Adjusted	Interesting	*Individuality	Manipulative
DIN23	.78	.24	.37	.71
	*Honest	Interesting	*Friendliness	Manipulative
DIN24	.91	.89	.91	.48
	*Personality/Disposition	*Drinking Beliefs	Hard to Get Along With	Intelligent
DIN25	.69	.64	.93	.60
	*Loudness	Manipulative	*Lawfulness	Argumentative
DIN26	.84	.80	.82	.68
	*Amicability	Good Sense of Humor	Manipulative	Academically Oriented
DIN27	.90	.77	.43	.00
	*Personalities	Athletic	Intelligent	Manipulative
DIN28	.54	.62	.54	.83
	Good Sense of Humor	Intelligent	Interesting	Academically Oriented
DIN29	.60	.63	.67	.48
	*Respect for Others	*Cooperation	Hard to Get Along With	Good Sense of Humor

*Aspect that Subject Generated and Chose for Rating

TABLE 8 (continued)

SUBJECTS	VOLUNTARY ASPECTS 1	2	3	4
GROUP 4				
YAT10	.30	.86	.65	.80
	*Friendliness	*Respect for Others	Good Sense of Humor	Hard to Get Along With
YAT12	.57	.51	.52	.75
	*Friendliness	Introverted	Hard to Get Along With	*Willingness to Help Others
YAT13	.73	.79	.73	.73
	Academically Oriented	Introverted	Good Sense of Humor	Hard to Get Along With
YAT15	.74	.91	.94	.90
	*Easy Going and Likes to Have a Good Time	*Easy to Talk to and Likes to Listen	Good Sense of Humor	Interesting
YAT16	.37	.33	.42	.54
	(No Label)	Good Sense of Humor	Well Adjusted	Hard to Get Along With
YAT17	.85	.80	.88	.87
	*Friendliness	Academically Oriented	*Trustworthiness	Interesting
YAT19	.43	.49	.18	.63
	Good Sense of Humor	Athletic	Interesting	Reserved
YAT20	.69	.60	.80	.66
	Interesting	*Humor	Athletic	Intelligent
YAT21	.96	.35	.92	.89
	Interesting	Athletic	Good Sense of Humor	Introverted
YAT22	.60	.76	.74	.75
	Introverted	Hard to Get Along With	Good Sense of Humor	Good Sense of Humor
YAT23	.84	.70	.84	.60
	Academically Oriented	Physically Attractive	Athletic	Intelligent
YAT24	.86	.88	.80	.81
	Introverted	*Materialism	Religious	Well Adjusted
YAT25	.73	.87	.80	.53
	Academically Oriented	Introverted	Athletic	Intelligent
YAT28	.31	.47	.90	.68
	Hard to Get Along With	*Genuine	Well Adjusted	Good Sense of Humor
YAT29	.20	.52	.87	.80
	*Sincerity	Good Sense of Humor	Athletic	Introverted
YAT32	.49	.87	.76	.89
	Introverted	Athletic	*Type of Student	*Involvement in Social Activity What Kind As Well
YAT33	.61	.58	.74	.55
	*Study Habits	Academically Oriented	Anxious	Introverted
YAT34	.82	.88	.62	.71
	Introverted	Hard to Get Along With	Reserved	Athletic

*Aspect that Subject Generated and Chose for Rating

characteristic in the subject's judgment of similarity, but the characteristic they generated was "knows how to dress." For the most part, the aspects people chose from the list were useful in explaining their data. Sometimes the aspects had very low ρ values which suggests that some subjects did not know what aspects they based their similarity judgments on. There were some commonly chosen aspects, which were important (high ρ values) in explaining individuals' solutions in all four groups. These aspects were athletic, religious, academic/intelligent and positive interpersonal attributes (friendly, interesting, cooperative, good sense of humor) or negative interpersonal attributes (superficial, anxious, and hard to get along with). These important voluntary aspects could be described generally as common interests and interpersonal appeal.

DISCUSSION

Previous research has established that schemata and implicit personality theories vary by perceiver correlates and perceptual judgments are influenced by internal and external variables. Researchers have assumed that people's cognitive representations are similar, but similarities have not been adequately tested. Jones and Young (1972) studied individual perceptions and found that people had similar cognitive representations of the group, but their study involved a group that had a formal structure. Their findings do not tell us whether people in unstructured groups organize others in the same way. The current project sought to establish and test the differences among individuals' person schemata or implicit personality theories. Multidimensional scaling techniques were used because they allow an indepth study of individual perception.

Several important differences set this project apart from the bulk of person perception research. Several groups were studied to avoid idiosyncratic results. They were drawn from the natural environment to avoid the arbitrary grouping of people in a laboratory. They were intact, naturally occurring social groups that were formed randomly and had no formal status differences among group members. There was no structure or definition apart from that which group members created. Subjects were asked to use their own definition of similarity for making similarity judgments. These judgments were then based on an already accepted definition of similarity, instead of one generated by the experimenter which would require their interpretation and use of an externally defined term. Free-response was encouraged, by soliciting the aspects people used in judging similarity. In addition to these changes, this study tested the importance of organizing traits found in other studies.

The results of this study show that people are not the same in their cognitive

organizations of other people. The poor fit and small amount of variance explained in the group solutions suggested that there was no general cognitive structure underlying the groups' conceptualizations. Trying to create subgroups of the individual solutions did not succeed because no pair of people shared the same conceptual framework. When data are sufficiently complex, as was found in this study, it requires more idiographic analyses and explanations. Individual solutions were the best way of describing the data. This should not be interpreted as evidence that there is no structure behind person perception, but that no global representation could be found to explain it.

There were similarities among groups and individuals. The questionnaire data revealed similarities among people based on participation in Greek life, dating habits, and satisfaction with relationships. The multidimensional scaling and rating analyses revealed similar R^2 and stress values across groups, similar ρ values for the mandatory aspects, and similar voluntary aspects chosen by subjects. No group required more dimensions than another group to explain their data. Some people's data were very clear-cut and simple, requiring only two dimensional solutions, while other people's data were more complicated and required four dimensions. For most people, three dimensions were adequate to explain their data. These findings suggest that groups as well as individuals were similar, but not the same.

Mandatory aspects were important to each group in different ways and were interrelated differently by group. These differences among groups could not be explained by obvious variables, like sex. There may have been an implicit group definition, which affected people's cognitive organization. Certain aspects may have been salient to group members in organizing the particular members of their group. The mandatory aspects (conventional, friendly, controlling, and open) were quite important to most solutions in explaining similarity relationships. The overall importance of the mandatory aspects in explaining MDS solutions validated the previous studies where these aspects were set forth (Forgas, 1976; Falbo, 1977; Battistich &Thompson, 1980; Hirshberg & Jennings). The

importance of the mandatory aspects suggests that people have similar underlying organizational principles, even though they manipulate them differently. There were many intercorrelations of the mandatory aspects for all four groups. This suggests that the mandatory aspects were not mutually exclusive. It is possible that different words or phrases would better describe the organizing characteristics better.

Other organizing traits which subjects chose fell into two categories: various interests and interpersonal attributes. Previous research suggested that these were important (Magnusson, 1971; Jones & Young, 1972; Forgas, 1976; Battistich & Thompson, 1980), but the multitude of traits could not be systematically validated in this study. The importance of these subject-generated aspects in explaining individual solutions suggest that people can assess the aspects underlying their perceptual judgments. These voluntary aspects were also important in defining the dimensions of individual solutions. Free-response should be encouraged in future studies, to ensure that subjects' interpretations are considered in the results.

The search for subgroups was unsuccessful, not because everyone used different aspects for judging similarity, but because they used the same aspects differently. Null & Bloch (1988) found individual solutions to best describe their data in a study of pilots' perceptions of work load. They found that individual solutions could be explained by similar dimensions, but the pilots used the dimensions differently. Even when individuals used the same dimensions, the dimensions had different relative weights for the different individuals. This is a profound discovery of an underlying similarity among individual solutions. If group solutions had been forced or subgroups formed even with high error terms, this may not have been evident. Thus, the idiographic approach was complicated, but ultimately revealed certain nomothetic properties in the individual solutions.

These results have implications for person perception, friendship formation and group organization. The importance of the mandatory aspects in people's organization of group members leads to the consideration that these aspects might be important when

perceiving others for the first time. People may use the mandatory aspects in perceiving others, not just in organization. People seem to organize their friends, as well as people they are not friends with, along these same dimensions. The presence of a group response style could mean that membership in a group influences cognitive organization in subtle ways.

The results of this study suggest that research on person perception should take a new tact. The philosophy used by biology is more applicable to the study of human behavior, than methods used in physics, as the following quote by Stephen Jay Gould (1980) so aptly expresses. "At the basis of all this ferment lies nature's irreducible complexity. Organisms are not billiard balls, propelled by simple and measurable external forces to predictable new positions on life's pool table. Sufficiently complex systems have greater richness. Organisms have a history that constrains their future in myriad, subtle ways." Biological research is not as simplistic as physics research, because biology involves evolution and relinquishes experimental control to gain knowledge from observation. Experimental manipulation is used, but the effects of many environmental and intrinsic variables are considered in the outcome of the experiment.

Most psychological research focuses on the operationalism and methods of physics. Gestalt theory offers an alternative; "the directionality of man's behavior is described at a higher level of abstraction than in other current theories, and some provision is made for the way the man himself structures his field" (Kelly, 1963, p.38). A combination of social constructivist and idiographic principles could improve the quality of psychological research.

According to social constructivists, the discovery of interesting information about people is available by studying them in their context and accepting individual complexity. Many important thinkers have provided support for this position. Wittgenstein (1953) insisted upon the primacy of the public world in matters of psychology, the most important information about people being what happens among them. In addition, Garfinkel (1967)

proposed ethnomethodology, the study of ordinary people's methods for producing and making sense of everyday life. He viewed the goals and aims of ordinary people as similar to the goals and aims of the social researcher.

In keeping with this, Harre and Secord (1972) encouraged new ways of thinking about people and new methods of studying their behavior. They focused on two recent shifts in perspective: the naturalistic conception of a human being as a rule-following agent; and the main features of a realist, non-positivist conception of science. The authors claim that people are conscious social actors, capable of controlling their performances and commenting intelligently upon them. They assert that social information is more accessible to researchers and this approach is more scientific than the traditional conception of the human as automaton. Thus, people can be enlisted to help researchers understand social behavior.

Kelly (1963) had similar beliefs about people's ability to study their environment. "Might not the individual man, each in his own personal way, assume more of the stature of a scientist, ever seeking to predict and control the course of events with which he is involved? Would he not have his theories, test his hypotheses, and weigh his experimental evidence? And, if so, might not the differences between the personal viewpoints of different men correspond to the differences between the theoretical points of view of different scientists?" (Kelly, 1963, p. 5). Man has the creative capacity to represent the environment, not merely respond to it. He has a constructive psychological nature. He creates templates or constructs, which are representations of the world, and then tests them against the reality of the world's events in terms of their predictive utility. These constructed systems are real and should be studied using methods which allow people to reveal their own theories.

Quite a few psychologists have admitted the importance of an idiographic approach to studying people's perceptions and cognitive organization (Allport, 1937; Kelly, 1963; Rosenberg & Sedlak, 1972; Gergen, 1977; Markus & Zajonc, 1985; Jaccard & Dittus,

1990). Allport (1937) first advocated broadening the approaches of psychology to include idiography. Taken in an extreme sense, nomothetic and idiographic approaches could be the study of mankind versus the study of a single man. Tempered by Kelly (1963), Allport's suggestion could be applied to each study as a collection of individuals' constructs. After the psychologist has conceptualized each case individually, he can further abstract the individual constructs to reveal constructs which underlie people in general.

Kelly (1963) assessed individual constructs for use in clinical practice. He found that people define the same idea differently. Kelly determined whether a discrepancy between two people's ideas existed by finding out what the organizing poles of the construct were for each perceiver. If two people described a person as kind, one of those people might mean kind as the opposite of cruel, while the other might mean kind as the opposite of hostile. Sometimes people have difficulty assessing their constructs and articulating how they are organized. Our language entails certain linguistic conventions about opposing traits, which makes it difficult for the person to accurately assess their constructs. It might take considerable insight to realize a person views angry as the opposite of happy, instead of the more traditional construct happy-sad.

Other studies have provided interesting information on individual social perceptions using idiographic methods (Null & Bloch, 1988; Prentice, 1990; Andersen & Cole, 1990). Prentice (1990) looked at the effect of familiarity on information processing speed and organization. Using idiographic methods to solicit information about self, a familiar person and an unfamiliar person, the researcher presented people with information from these descriptions one week later. Response latency was used to infer how organized and accessible these three categories of information were. There were clear differences in processing speed for self information versus information about the unfamiliar person. These differences were matched by information processing of familiar versus unfamiliar others.

Andersen and Cole (1990) also used idiographic methods to study the effect of

organization on information processing. They proposed that important people in one's life were better-organized in the mind of the person. These well-organized person categories can influence social perception even more than representations of other categories, such as nonsignificant others, stereotypes, or traits. Specific information from each of these categories was solicited from subjects. It was found that the cognitive representations of important people were richer, more distinctive and more accessible compared to the other categories. Recognition was tested after subjects were presented with a fictional person, whose description indirectly referred to each type of category (significant others, nonsignificant others, stereotypes, and traits). More false-positive errors were made about targets who activated significant-other categories. Thus, information processing was affected if the stimulus was similar to a significant other. The success of these studies should encourage other psychologists to continue using and developing idiographic methodology.

The question persists about the accuracy of people's perceptions and categories. This is important because distortion and bias can lead to social misjudgment. Allport (1954) wrote about the nature of prejudice and the normality of this process. He suggested that erroneous generalization and hostility were natural capacities of the human mind and led to categorical prejudgment. Snyder, Tanke & Berscheid (1977) studied the behavioral confirmation of social stereotypes in college students. Male subjects were placed in a dyadic interaction with a female target who were manipulated to be physically attractive or unattractive. The stereotype that beauty implies goodness was manipulated. Conversations between the subjects and stimulus revealed that targets who were perceived to be physically attractive were also more likeable and friendly. The researchers suggest that social cognitive research should attend to the ways in which perceivers generate the information which affect their perception and the ways they process that information.

Merton (1948) wrote that "if men define situations as real, they are real in their consequences." In a recent paper, Gilovich (1990) wrote that people's own beliefs, values

and habits tend to bias their perceptions of how widely their ideas are shared (the false consensus effect). He suggested that people fail to realize their choices are not made from all possible alternatives, that sometimes certain alternatives are ignored. This study tested whether subjective construal of the alternatives could explain a false consensus effect. One part of the study established that a larger false consensus effect was produced when the situation presented allowed the most amount of subjective construal by being more general and less well defined. Another part of the study found that subjects who made different choices tended to interpret the response alternatives in ways that reflected the choices they made. Also, subjects who were led to construe the alternatives in the same way tended to make the same choices. When no structure was provided, people tended to differentiate more. These studies suggest a reason why people do not modify their cognitive schemas given new information. First of all the incongruous information can be ignored through selective attention, because people's perceptions are organized by their previously existing ideas. Secondly, people perceive their ideas to be widely shared which offers security in numbers.

More research on systematic bias in perceptions may offer solutions for social prejudice. Kenny (1991) developed a model for judging accuracy in people's perceptions of others. It tests the agreement between two judges about a target stimulus person exhibiting certain behaviors. It was found that greater acquaintance with a stimulus increased accuracy of perception, but did not increase consensus. The model points to the importance of similar meaning systems in determining whether judges will agree in their perception of the behavior. Judges' perceptions may be based on properties that accurately describe the stimulus, but judges may not agree on how the stimulus rates on different properties. This new model for understanding accuracy and consensus could be used in idiographic studies of social perception.

Social constructivist ideas could be applied to clinical research on social adjustment. In clinical situations, individual perceptions are very important. For studies of marital

therapy, people's conversation may reveal where perceptual differences exist (Moller &Van Zyl, 1991). In clinical studies of depression, misperception has been found to increase in depressed people. Depressed people's perceptions are less accurate when compared to the reality of their situation. Thompson and Heller (1990) studied the social support available and the perception of social support in community-dwelling elderly women. It was found that women who perceived themselves as isolated and having little family support had poorer psychological well-being. This perception was distinct from the actual assessment of social resources available to them. Attention to individual perceptions is a valuable pursuit, because of the connection between accuracy and psychological health.

People have varied cultural backgrounds and socialization experiences which are important influences on their beliefs and behavior (Mead, 1934; Goffman, 1955; Bruner, 1986; Davies, 1989). The personalities of perceivers have a great impact on their perceptions of others (Wiggins, Hoffman & Taber, 1969; Wish, Deutsch & Biener, 1970; Sherman & Ross, 1972; Markus, 1977; Rogers, Kuiper & Kirker, 1977). A deeper understanding of people can be achieved if these aspects are included in scientific inquiry. In research, the tendency to look for nomothetic principles, or ways of understanding everyone, is wide-spread. A true understanding of individuals may not be possible without more attention to individuals first. From idiographic analyses, researchers can look for underlying principles about person perception. The current study has shown that this is possible and suggests that this is a good direction for research to follow.

APPENDIX A

COLLEGE OF WILLIAM & MARY

RESEARCH PARTICIPATION CONSENT FORM

The general nature of this experiment on social schema conducted by Joy Austin has been explained to me. I understand that I will be asked about my perceptions of people on my hall. I further understand that my anonymity will be preserved and that my name will not be associated with my responses or with any results of this study. I know that I may refuse to answer any question asked and that I may discontinue participation at any time. I also understand that payment for participation will not be affected by my responses or by my exercising any of my rights. I am aware that I may report dissatisfaction with any aspect of this experiment to the Research Ethics Committee. I understand that in order to participate I must be 18 years of age or have my parent or guardian co-sign this consent form. My signature below indicates that I am willing to participate in this study.

_____ _____

Date Signature of Student

_____

Parent's Signature (only necessary if student under 18)

APPENDIX B

N.B. What follows is a hard copy of what subjects saw during data collection, using a fictitious group of 3 to demonstrate the procedures.

This is a study concerning perceptions of people in an intact group. The people on your dormitory hall will be presented for you to compare. These people are:

Lyn
Chris
Terry

Press any key to continue

Pairs of these people will be presented to you. Please consider the two people and judge their similarity.

You will be moving the dash (-) along a line to indicate how related the people are. To move the dash, use the keys to your right, labeled #6 (to move right) and #4 (to move left). If the people seem very similar, move the dash to the far left. If they are totally unrelated, move the dash to the far right. Move the dash anywhere along the line so it best represents how similar you believe the people to be. When the dash is positioned where you want it, press the slash (/) to enter your rating.

There are no right or wrong answers. Please be honest and thoughtful in your responses. Let the experimenter know when you have finished this section.

Press any key to continue

Lyn Chris

\-

: :
similar dissimilar

Chris Terry

\-

: :
similar dissimilar

Terry Lyn

\-

: :
similar dissimilar

APPENDIX C

Now you will begin the second phase of this study. We are interested in understanding what you think are the important characteristics or aspects of the people you have just rated. Please list three aspects of the people you compared that you think are very important. Enter these one per line followed by a return.

Aspect #1
Aspect #2
Aspect #3

On the next screen, several several characteristics that might have been used in your ratings will appear. The list includes the three you have just entered. You will be asked to choose the four characteristics that you think were most important while you were making the similarity judgments. If you would like to see the list again, type an "r." After looking over the list, enter the number of the most important characteristic or aspect.

1. Aspect #1
2. Aspect #2
3. Aspect #3
4. Good sense of humor
5. Religious
6. Introverted
7. Well-adjusted
8. Athletic
9. Hard to get along with
10. Academically oriented
11. Reserved
12. Physically attractive
13. Intelligent
14. Argumentative
15. Interesting
16. Anxious
17. Manipulative

Press any key to continue

You will now rate each of the people on the characteristic (aspect) you have selected. If the person has very little of the characteristic, use the left arrow (key #4) to move the dash (-) to the far left. If this aspect is very characteristic of the person, use the right arrow (key #6) to move the dash to the far right. Move the dash to the place along the line that best represents your rating and then press the slash (/).

Press any key to continue

Lyn
Physically attractive

: :
low high

Chris
Physically attractive

: :
low high

Terry
Physically attractive

: :
low high

Lyn
Intelligent

: :
low high

Chris
Intelligent

: :
low high

Terry
Intelligent

: :
low high

Lyn
Aspect #3

: :
low high

Chris
Aspect #3

low high

Terry
Aspect #3

low high

Lyn
Reserved

low high

Chris
Reserved

low high

Terry
Reserved

low high

Lyn
How conventional is this person's lifestyle and outlook?

low high

Chris
How conventional is this person's lifestyle and outlook?

low high

Terry
How conventional is this person's lifestyle and outlook?

: :
low high

Lyn
How friendly or sociable is this person?

: :
low high

Chris
How friendly or sociable is this person?

: :
low high

Terry
How friendly or sociable is this person?

: :
low high

Lyn
How much does this person control and influence social interaction?

: :
low high

Chris
How much does this person control and influence social interaction?

: :
low high

Terry
How much does this person control and influence social interaction?

: :
low high

Lyn

How much does this person allow others to know him/her?

: :

low high

Chris

How much does this person allow others to know him/her?

: :

low high

Terry

How much does this person allow others to know him/her?

: :

low high

APPENDIX D

Freshmen Group Study
Background Information

Subject ID: Sex:

Race: Age:

Where do you live when not at college?

Are you in a sorority or fraternity?
If so, which one?

What is your concentration or possible major?
What career might you pursue?

What are your extracurricular activities, hobbies or interests?

Are you dating someone steadily right now?

Circle the number which applies:

1) How socially active are you with the people on your hall?

1 2 3 4 5 6 7 8 9
Not at all Somewhat Very

2) How satisfied were you in *high school* in relationships with friends of the *same* sex?

1 2 3 4 5 6 7 8 9
Not at all Somewhat Very

3) How satisfied were you in *high school* in relationships with friends of the *opposite* sex?

1 2 3 4 5 6 7 8 9
Not at all Somewhat Very

4) How satisfied are you *now* in relationships with friends of the *same* sex?

1 2 3 4 5 6 7 8 9
Not at all Somewhat Very

5) How satisfied are you *now* in relationships with friends of the *opposite* sex?

1 2 3 4 5 6 7 8 9
Not at all Somewhat Very

Rank the people in your group according to who your closest friends are. Begin your list with the name of the person you consider your best friend in the group and end the list with the person you are least friendly with. In the column headed FRIENDS, put a check by the names of people you consider your friends and a zero by the names of people you don't consider your friends. Refer to the list of people in your group, so you can write their whole name and include everyone in the group.

	NAME	FRIENDS
1)		
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		
11)		
12)		
13)		
14)		
15)		
16)		
17)		
18)		
19)		
20)		

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